Docket	:	A.15-07-015
Exhibit Number	:	ORA - ____
Commissioner	:	Catherine Sandoval
Administrative Law Judge	:	Jeanne McKinney
ORA Witnesses	:	Susana Nasserie Jenny Au

OFFICE OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

***** PUBLIC VERSION (redacted)*****

REPORT ON PLANT FOR BAKERSFIELD, KERN RIVER VALLEY, KING CITY, SALINAS, SELMA AND VISALIA DISTRICTS

California Water Service Company
Test Year 2017 General Rate Case
A.15-07-015

San Francisco, California
March 2016

MEMORANDUM

This Report on Plant for California Water Service Company GRC A.15-07-015 is prepared by Susana Nasserie of the *Office of Ratepayer Advocates (ORA) - Water Branch,* and under the general supervision of Program Manager Danilo Sanchez, and Program & Project Supervisor Ting-Pong Yuen. Jenny Au is responsible for Chapter 2, Section C.1.f -Water Supply Projects in Bakersfield District. The witnesses' Statements of Qualifications are in Chapter 7 of ORA's Company-Wide Report on Results of Operations. Kerriann Sheppard and Christa Salo serve as ORA legal counsels.

Report on Plant for Bakersfield, Kern River Valley King City, Salinas, Selma and Visalia Districts

Table of Contents

Chapter 1: EXECUTIVE SUMMARY

A. INTRODUCTION

This report presents ORA's analysis and recommendations on Plant in Service for the Bakersfield, Kern River Valley, King City, Salinas, Selma, and Visalia districts in General Rate Case Application (A.) 15-07-015 filed by California Water Service Company (Cal Water or CWS). The recommendations herein also reflect recommendations in ORA's Report on Plant – Common Issues which address issues affecting plant estimates for most or all CWS's districts.

B. RECOMMENDATIONS

Table 1-A below provides a summary of recommended capital budgets for the districts covered in this report. Chapters 2 through 7 of this report present plant analysis and recommendations for Bakersfield, Kern River Valley, King City, Salinas, Selma, and Visalia districts, respectively.

Table 1-A: Capital Budget Summary - ORA's Recommended Plant Additions

ORA Estimates ($000)	2015	2016	2017	2018	Annual Average
Bakersfield	$5,779.6	$6,121.8	$7,235.8	$6,879.8	$6,504.2
Kern River Valley	$ 786.6	$ 237.8	$ 175.6	$ 236.3	$ 361.1
King City	$1,100.6	$ 178.1	$1,132.3	$ 675.4	$ 771.6
Salinas	$7,240.1	$3,910.6	$3,311.5	$3,116.8	$4,394.7
Selma	$ 524.8	$ 530.1	$ 528.8	$ 497.8	$ 520.4
Visalia	$1,870.5	$ 777.0	$ 929.5	$ 776.3	$1,088.3

Chapter 2: Plant – Bakersfield District

A. INTRODUCTION

This chapter presents ORA's analyses and recommendations for Plant in Service for CWS's Bakersfield District.

B. SUMMARY OF RECOMMENDATIONS

Based on ORA's review and analysis of CWS's requested plant additions, ORA recommends disallowance, adjustment, deferral or Advice Letter treatment where appropriate. These recommendations form the basis of ORA's recommended capital budget summary presented in **Table 2-A** below. ORA's estimate plant additions also reflect recommendations in its Common Plant Issues testimony regarding Pipeline Replacement Program, Meter Replacement Program, SCADA, and Vehicles. **Table 2-B** presents ORA project-specific adjustments.

Table 2-A: Capital Budget Summary – Bakersfield District

Bakersfield ($000)	2015	2016	2017	2018	Annual Average
ORA	$ 5,779.6	$ 6,121.8	$ 7,235.8	$ 6,879.8	$ 6,504.2
CWS	$ 14,457.5	$ 25,242.4	$ 31,141.7	$ 30,026.7	$ 25,217.1
CWS > ORA	$ 8,677.9	$ 19,120.6	$ 23,905.9	$ 23,146.9	$ 18,712.8
ORA as % of CWS	40%	24%	23%	23%	28%

Table 2-B: Capital Budget Details – Bakersfield District

2015	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	20096	3,150' 8" PVC; Reconnect 68 1" Services; 1 Reconnect 1 2" Services; Reconnect 7 Hydrants on Belle Terrace - Castro Lane to Caylor St.	$ -	$ 565,145	$ 565,145	0%
	20171	1,470' 8" PVC; Reconnect 2 Hydrants - South K Street - Wilson to Sidney Drive	$ 384,070	$ 241,876	$ (142,195)	159%
	20185	P Street & Dorian Drive - South Chester & Wilson Road - 560' 6" PVC; Reconnect 13 1" Services; 1 Hydrant	$ 343,377	$ 112,288	$ (231,088)	306%
	20188	850' 6" PVC; Reconnect 20 1" Services; Reconnect 1 Hydrant - Houchin Road - Belle Terrace to Lester St.	$ 176,397	$ 157,292	$ (19,105)	112%
	20191	988' 6" PVC & Reconnect 23 1" Services; 2 Hydrants - Wood Lane - Real Road East to end	$ 152,811	$ 171,293	$ 18,482	89%
	20212	Drake Street - 24th St. to Spruce St. - 2,348' 8" PVC; Reconnect 36 1" Services & 1 2" Service; Reconnect 5 Hydrants	$ -	$ 417,605	$ 417,605	0%
	27051	Paint Interior Complete and Upgrade CP System - Sta. 147 T4	$ -	$ -	$ -	0%
	63614	Replace Pump Equipment - Sta. 143-01	$ -	$ 91,986	$ 91,986	0%
	51708	Interior Safety Climb - Sta. 148 Tank 2	$ 2,965	$ 3,419	$ 454	87%
	54208	Replace Interior Safety Climb - Sta. 116 Tank 4 (University)	$ 3,524	$ 4,532	$ 1,008	78%
	60192	Retrofit 13 Single Eyewash Stations to OSHA Approved Eyewash/Shower Combo units - Sta. 189, Sta. 190, Sta. 191, Sta. 195, Sta. 196, Sta. 197, Sta. 214, Sta. 217, Sta. 219, Sta. 154, Sta. 156, Sta. 185, Sta. 188	$ -	$ 87,086	$ 87,086	0%
	60252	Replace 10 LMI Chemical Pumps	$ 10,373	$ 11,773	$ 1,400	88%
	61317	Purchase field equipment	$ -	$ 29,070	$ 29,070	0%
	61600	Field - Tools for Pump Operators	$ -	$ 25,376	$ 25,376	0%
	61601	72 New Filter Modules - NE WTP	$ -	$ 309,330	$ 309,330	0%
	51808	Paint Interior Complete, Upgrade CP System, & Replace Cupola Vent - Sta. 45 Tank 2	$ 32,759	$ 20,716	$ (12,043)	158%
	61712	Upgrade CP System - Sta. 155 Tank 1	$ 16,562	$ 14,473	$ (2,089)	114%
	62353	Office - 50 Chairs and 5 Tables - Field Conference Room	$ -	$ 3,213	$ 3,213	0%
	61734	Paint Interior Complete; Replace & Install One 48" DIA. Cupola Vent - Sta. 155 Tank 1	$ 10,400	$ 10,605	$ 205	98%
	64483	REPLACE V204042 MEETS 120K MILEAGE CRITERIA. PURCHASE 1.0 TON C&C WITH UTILITY BODY	$ -	$ 70,788	$ 70,788	0%
	64488	Vehicle - 0.5 Ton Pick Up F-150 with Tool Box and Light Bar - Meter Reader	$ -	$ 42,000	$ 42,000	0%
	64491	Vehicle - 0.5 Ton Pick Up With Accessories - General Foreman	$ -	$ 42,000	$ 42,000	0%
	64493	Vehicle - 0.5 Ton Pick Up With Accessories - Superintendent	$ -	$ 42,000	$ 42,000	0%
	64496	Vehicle - Maintenance Superintendent	$ -	$ 41,600	$ 41,600	0%
	64498	Vehicle - 0.5 Ton Pick Up With Tool Box and Light bar - Serviceperson	$ -	$ 42,000	$ 42,000	0%
	65547	2600 Conversion of Flat Rate Services to Metered Services	$ 1,530,729	$ 2,862,823	$ 1,332,094	53%
	67574	Pumphouse Imporvement - Sta. 88-01	$ -	$ 48,000	$ 48,000	0%
	BKD0900	Meter Replacement Program	$ -	$ 252,035	$ 252,035	0%
Specifics Total			**$ 2,663,967**	**$ 5,720,325**	**$ 3,056,358**	**47%**
Non-Specifics Total			**$ 1,619,614**	**$ 2,876,350**	**$ 1,256,736**	**56%**
Carry-Overs Total			**$ 1,496,029**	**$ 5,860,839**	**$ 4,364,810**	**26%**
TOTAL 2015			**$ 5,779,610**	**$ 14,457,514**	**$ 8,677,904**	**40%**

2016	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	97419	Bakersfield CP System Upgrade -2016 - Sta.45 Tank 1, Sta.73 Tank 5, Sta.87 Tank 7	$ 56,010	$ 56,010	$ -	100%
	97762	Replace the existing 10,000 gal pressure tank,at Sta. 100 which was installed in 1954.	$ -	$ 221,860	$ 221,860	0%
	97886	Replace existing pumps that have worn out and are over 3 years old. Repair parts are over half price of a new pump.	$ 27,226	$ 27,226	$ -	100%
	98072	Replacement of pump and motor.	$ 67,092	$ 67,092	$ -	100%
	98074	Replacement of pump and motor.	$ 52,607	$ 52,607	$ -	100%
	98075	Replacement of pump and motor.	$ -	$ 52,607	$ 52,607	0%
	98077	Replacement of pump and motor.	$ -	$ 104,082	$ 104,082	0%
	98078	Replacement of pump and motor.	$ -	$ 121,297	$ 121,297	0%
	98079	Replacement of pump and motor.	$ 52,607	$ 52,607	$ -	100%
	98081	Replacement of pump and motor.	$ -	$ 191,174	$ 191,174	0%
	98084	Replacement of pump and motor.	$ 94,287	$ 94,287	$ -	100%
	98526	Replacement of 4 control valves in Bakersfield. Location: 101_000_CV004, 101_000_CV016, 101_000_CV003, 101_045_VLV	$ 117,065	$ 117,065	$ -	100%
	98619	Overhaul of Control Valves in the Bakersfield District - 2016	$ 3,597	$ 74,542	$ 70,945	5%
	98674	Replace the existing RTU panels at a total of 5 stations in BK District. Locations TBD	$ -	$ 131,916	$ 131,916	0%
	98690	update RTU and Install control valve (Cla-Val) to take more water from University Tanks to Skyline Tanks.	$ 45,568	$ 45,568	$ -	100%
	99019	1,300 Conversion of Flat Rate Services to Metered Services	$ 461,148	$ 1,898,902	$ 1,437,754	24%
	99021	1,300 Conversions of Flat Rate Services to Metered Services	$ 461,430	$ 1,900,134	$ 1,438,704	24%
	99038	Replace 2 trailer mounted portable air compressors, existing compressors will not meet new CARB regulations which take effect on 01/01/2017	$ 45,072	$ 45,072	$ -	100%
	99048	Replace / Purchase , Field equipment for 2016 due to age and wear. Jackhammers, rockdrill, trench pumps, locators box and stick.	$ 44,908	$ 44,908	$ -	100%
	99062	Field tools for operators	$ 16,390	$ 16,390	$ -	100%
	99083	Purchase and spread 3/4" ROCK on dirt area at various Bakersfield pump stations	$ 14,284	$ 14,284	$ -	100%
	99110	Vehicle Replacements > 120,000 miles	$ 339,814	$ 924,382	$ 584,568	37%
	99125	Purchase and install a new compressed air system for the NE WTP microfiltration process. System includes compressors, dryers, and receiver tanks.	$ -	$ 160,870	$ 160,870	0%
	99127	Replace capacitors on two raw water pump VFD's at NE WTP raw water pumping plant.	$ -	$ 115,914	$ 115,914	0%
	99135	Replace on-line compliance turbidimeters at the NE WTP. On-line turbidimeters are required by regulations for process monitoring.	$ -	$ 192,200	$ 192,200	0%
	99265	Purchase and install a new compressed air system for the NW WTP microfiltration process. System includes compressors, dryers, and receiver tanks.	$ -	$ 156,638	$ 156,638	0%
	99297	Purchase and install new security cameras for the NE Treatment Plant and NE Raw Water Pumping Plant	$ -	$ 123,852	$ 123,852	0%
	99407	Replace V204044 two years ahead of projection of vehicle to reach 120,000 miles due to repairs performed on vehicle.	$ -	$ 169,361	$ 169,361	0%
	99719	Arsenic Treatment Well 202-01	$ -	$ 1,769,485	$ 1,769,485	0%
	100781	This project will provide upgrades to Station 196, so that the booster pump capacity will match the capacity of the existing well pump (600 gpm). This project will involve demolition of miscellaneous mechanical and electrical equipment at the site. Installation of a single booster pump along with panel board (electrical) upgrades, flow meter, motor VFD, and generator. Upgrade is required to meet water supply needs in the North Garden service area.	$ -	$ 689,841	$ 689,841	0%
	101575	The existing "farm" tanks Sta. 87 cannot be taken out of service for any maintenance works without need to shut down entire station operations first.	$ 37,311	$ 37,311	$ -	100%
	102082	1,300 Conversion of Flat Rate Services to Metered Services	$ 446,928	$ 1,840,416	$ 1,393,488	24%
	102083	1,300 Conversions of Flat Rate Services to Metered Services	$ 447,218	$ 1,841,610	$ 1,394,392	24%
	102111	AMI Upgrade Flat to Meter Program (3-year program)- Marginal Cost to install AMI when installing a meter in the flat-to-meter program	$ -	$ 1,040,149	$ 1,040,149	0%
	101MRP16	The 2016 main replacement program will replace 27,030 feet of pipelines in the Bakesfield district at an estimated cost of $154 per foot.	$ 3,003,179	$ 6,205,787	$ 3,202,608	48%
	BKD0900	Meter Replacement Program	$ 288,046	$ 413,783	$ 125,737	70%
Specifics Total			**$ 6,121,785**	**$ 21,011,225**	**$ 14,889,439**	**29%**
Non-Specifics Total			**$ -**	**$ 3,858,400**	**$ 3,858,400**	**0%**
Carry-Overs Total			**$ -**	**$ 372,805**	**$ 372,805**	**0%**
TOTAL 2016			**$ 6,121,785**	**$ 25,242,430**	**$ 19,120,644**	**24%**

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2017	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	97420	Upgrade Cathodic Protection Systems at Stations: 100-T3, 116-T1, 116-T2, 116-T3, 116-T4	$ 95,684	$ 95,684	$ -	100%
	97728	The existing 5,000 gal pressure tank was installed in 1953 (see Attach 1). The unit will have been in service for 63 years by 2016. In short, the unit has reached the end of its useable useful life and replacement is needed for better station efficiency and improvement in operations.	$ -	$ 150,993	$ 150,993	0%
	97899	Replace the existing 10,000 gal pressure tank at Sta. 116, which was installed in 1953.	$ -	$ 227,411	$ 227,411	0%
	97936	Install 30" manway on Tank 1 and replace interior Saf-T-Climb rail on the interior ladder for Tank 4.	$ 20,250	$ 20,250	$ -	100%
	98008	BK 45 efg galvanized metal building and panelboard removal and replacement with outdoor station/panelboard	$ 11,557	$ 526,487	$ 514,930	2%
	98092	Replacement of pump and motor.	$ 68,769	$ 68,769	$ -	100%
	98093	Replacement of pump and motor.	$ 58,917	$ 58,917	$ -	100%
	98251	Replace existing chlorine pumps that have worn out and are over 3 years old. Repair parts are over half price of a new pump. We'll be installing Pulsatron pumps	$ 27,907	$ 27,907	$ -	100%
	98444	BK 89 Galvanized Metal Building removal and replacement, station piping change, and panelboard replacement.	$ 11,557	$ 542,697	$ 531,140	2%
	98532	Replacement of 1 control valve in Bakersfield. Location: 101_000_CV022	$ 29,998	$ 29,998	$ -	100%
	98626	Overhaul of Control Valves in the Bakersfield District - 2017	$ 3,682	$ 76,405	$ 72,723	5%
	98679	Replace a total of 5 RTUs in BK District. Stations TBD	$ -	$ 94,884	$ 94,884	0%
	98696	Install a total of nine Flow meters at Stations 87, 45, 73, 100,116, 176, 186, 194, 196	$ -	$ 367,287	$ 367,287	0%
	98810	Replace existing auxiliary engine with 150 kW generator	$ -	$ 198,948	$ 198,948	0%
	98847	Replace existing auxiliary engine at BK 150 with new 150 kW generator	$ -	$ 198,948	$ 198,948	0%
	98977	Install a 10 PRV at Turnout with KCWA (Mohawk St & Ragusa Ln)	$ -	$ 282,510	$ 282,510	0%
	98992	Seismic retrofit of the storage tank inlet and outlet at Sta. 194 T1 with EBAA Flex Tend connection.	$ -	$ 94,517	$ 94,517	0%
	99040	1,300 Conversion of Flat Rate Services to Metered Services	$ 472,809	$ 1,947,637	$ 1,474,828	24%
	99041	1,300 Conversion of Flat Rate Services to Metered Services	$ 472,815	$ 1,947,637	$ 1,474,822	24%
	99054	Replace-purchase field equipment for 2017 due to age and wear	$ 39,199	$ 39,199	$ -	100%
	99068	Field equipment for pump operators	$ 16,800	$ 16,800	$ -	100%
	99082	To purchase 20 conference room chairs for the BK Field yard	$ 4,480	$ 4,480	$ -	100%
	99086	PURCHASE AND SPREAD 3/4" ROCK ON DIRT AREA TO REDUCE DUST AND WEEDS	$ 15,165	$ 15,165	$ -	100%
	99111	Vehicle Replacements > 120,000 miles	$ 353,800	$ 613,742	$ 259,941	58%
	99140	Standby generator for the raw water pumping plant at the NE WTP.	$ -	$ 858,709	$ 858,709	0%
	99160	Replace 144 filter modules at the NE WTP	$ 382,889	$ 382,889	$ -	100%
	99199	Replace electrical panelboard (indoors) at BK Sta. 81	$ -	$ 321,145	$ 321,145	0%
	99269	Replace on-line compliance turbidimeters at the NW WTP. On-line turbidimeters are required by regulators for process monitoring.	$ 97,243	$ 97,243	$ -	100%
	99270	Replace chemical feed pumps at the NW WTP.	$ -	$ 288,354	$ 288,354	0%
	99274	Remove galvanized metal building and panelboard. Replace with outdoor panelboard and acoustic shelter.	$ 11,557	$ 452,831	$ 441,274	3%
	99299	Purchase new tractor for solids handling process at NE WTP	$ 60,426	$ 60,426	$ -	100%
	99780	Replace all modules (360 total) on the four production racks at NW WTP.	$ 694,857	$ 694,857	$ -	100%
	99781	Convert backwash recovery rack at NW WTP to a production rack.	$ -	$ 833,303	$ 833,303	0%
	99820	New well addition in S West - Well #1. Prospective Well Location To Be At Station 198	$ -	$ 1,964,470	$ 1,964,470	0%
	99821	New well addition in S West - Well #2	$ -	$ 1,964,470	$ 1,964,470	0%
	102087	1,300 Conversion of Flat Rate Services to Metered Services	$ 458,259	$ 1,887,650	$ 1,429,391	24%
	102088	1,300 Conversion of Flat Rate Services to Metered Services	$ 458,259	$ 1,887,650	$ 1,429,391	24%
	102115	AMI Upgrade Flat to Meter Program (3-year program)- Marginal Cost to install AMI when installing a meter in the flat-to-meter program	$ -	$ 1,066,153	$ 1,066,153	0%
	101MRP17	The 2017 main replacement program will replace 27,030 feet of pipelines in the Bakesfield district at an estimated cost of $154 per foot.	$ 3,074,054	$ 6,360,932	$ 3,286,878	48%
	BKD0900	Meter Replacement Program	$ 294,844	$ 424,128	$ 129,284	70%
Specifics Total			**$ 7,235,777**	**$ 27,192,481**	**$ 19,956,704**	**27%**
Non-Specifics Total			**$ -**	**$ 3,949,200**	**$ 3,949,200**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2017			**$ 7,235,777**	**$ 31,141,681**	**$ 23,905,904**	**23%**

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2018	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	97438	Upgrade cathodic protection sytsem at BK- Sta.148 Tank 2, Sta.161 Tank 1, Sta.188 Tank 1	$ 58,846	$ 58,846	$ -	100%
	97938	Install CWS standard tank hatch and interior ladder with Saf-T-Climb rail on the interior of the tank. Sta. 164-T1	$ 27,196	$ 27,196	$ -	100%
	97994	BK STA 42 galvanized metal building removal and replacement, station piping change and panelboard replacement.	$ 11,846	$ 556,265	$ 544,419	2%
	98047	Replace existing auxiliary engine at Sta. 157 with 150 kW generator	$ -	$ 206,439	$ 206,439	0%
	98094	Replacement of pump and motor.	$ 71,896	$ 71,896	$ -	100%
	98096	Replacement of pump and motor.	$ -	$ 60,390	$ 60,390	0%
	98124	Replace ex 9,500 gal pressure tank at Sta. 83	$ 233,092	$ 233,092	$ -	100%
	98269	Replace existing pumps that have worn out and over 3 years old. Repair parts are over half the price of a new pump.	$ 18,389	$ 18,389	$ -	100%
	98348	New well addition in North Garden West - Well #1	$ -	$ 2,013,583	$ 2,013,583	0%
	98528	Replacement of 4 control valves in Bakersfield. Location: 101_045_CV008, 101_045_CV008, 101_045_CV008, 101_045_CV008	$ 122,991	$ 122,991	$ -	100%
	98628	Overhaul of Control Valves in the Bakersfield District - 2018	$ 3,766	$ 78,316	$ 74,550	5%
	98688	Replace a total of 5 RTUs in BK District. Stations TBD	$ -	$ 95,690	$ 95,690	0%
	98844	Replace existing auxiliary engine at BK 049 with new 150kW generator	$ -	$ 206,439	$ 206,439	0%
	98850	Replace existing auxiliary engine at Sta. 116 with 150 kW generator	$ -	$ 206,439	$ 206,439	0%
	98966	Seismic upgrade, inlet and outlet pipe, of Tank T1 at Station 164	$ -	$ 140,303	$ 140,303	0%
	98967	Install a 10 inch pressure reducing valves (PRV's) at SW Meany Ave & Alken Street.	$ -	$ 38,963	$ 38,963	0%
	99018	Install Flow Control on Ex. 10" Pipeline	$ -	$ 350,933	$ 350,933	0%
	99042	1300 Conversion of Flat Rate Services to Metered Services	$ 484,635	$ 1,996,328	$ 1,511,693	24%
	99044	1300 Conversions of Flat Rate Services to Metered Services	$ 484,635	$ 1,996,328	$ 1,511,693	24%
	99058	2018 Field Equipment Replace and purchase, due to wear and age.	$ 48,789	$ 48,789	$ -	100%
	99073	Filed equipment for pump operators	$ 17,220	$ 17,220	$ -	100%
	99088	Spread 3/4" Rock on dirt area to reduce dust and weeds	$ 15,008	$ 15,008	$ -	100%
	99112	Vehicle Replacements > 120,000 miles	$ 261,141	$ 386,864	$ 125,724	68%
	99154	Replace chemical feed pumps at NE WTP. Pumps will be 14 years old, are outdated, and expensive to maintain.	$ -	$ 501,724	$ 501,724	0%
	99165	Replace 144 filter modules at the NE WTP	$ 635,239	$ 635,239	$ -	100%
	99166	Replace the SCADA system server and software. This is a the district portion of a combined project to replace all of the SCADA system software and hardware throughout Cal Water.	$ -	$ 1,532,571	$ 1,532,571	0%
	99267	Upgrade SCADA and controls system at the NW WTP	$ -	$ 291,510	$ 291,510	0%
	99527	Seismic retrofit of the storage tank inlet and outlet with EBAA Flex Trend connections Sta.210-T1. Inlet and outlets are 12-inches in diameter and 16-inches in diameter respectively.	$ -	$ 148,886	$ 148,886	0%
	99818	New well addition in North Garden West - Well #2	$ -	$ 2,013,583	$ 2,013,583	0%
	102089	1300 Conversion of Flat Rate Services to Metered Services	$ 469,716	$ 1,934,841	$ 1,465,125	24%
	102090	1300 Conversions of Flat Rate Services to Metered Services	$ 469,708	$ 1,934,841	$ 1,465,133	24%
	102116	AMI Upgrade Flat to Meter Program (3-year program)- Marginal Cost to install AMI when installing a meter in the flat-to-meter program	$ -	$ 1,092,807	$ 1,092,807	0%
	101MRP18	The 2018 main replacement program will replace 27,030 feet of pipelines in the Bakesfield district at an estimated cost of $154 per foot.	$ 3,144,142	$ 6,519,955	$ 3,375,813	48%
	BKD0900	Meter Replacement Program	$ 301,566	$ 434,731	$ 133,165	69%
Specifics Total			**$ 6,879,818**	**$ 25,987,392**	**$ 19,107,574**	**26%**
Non-Specifics Total			**$ -**	**$ 4,039,300**	**$ 4,039,300**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2018			**$ 6,879,818**	**$ 30,026,692**	**$ 23,146,874**	**23%**

C. DISCUSSION

The Bakersfield District recorded $10,452,846 in annual average gross plant additions for the most recent six-year period 2009-2014.[1] Table 2-C compares CWS's and ORA's estimates against recorded annual average gross plant additions.

Table 2-C: Capital Budget Proposals vs. Recorded Expenditures– Bakersfield District

Bakersfield ($000)	2015	2016	2017	2018	Annual Average	% of Recorded
2009-2014 Recorded	--	--	--	--	$ 10,452.8	100%
ORA	$ 5,779.6	$ 6,121.8	$ 7,235.8	$ 6,879.8	$ 6,504.2	62%
CWS	$ 14,457.5	$ 25,242.4	$ 31,141.7	$ 30,026.7	$ 25,217.1	241%

ORA presents a discussion on its analyses and recommended adjustments to CWS's requested capital budget for specific projects (Section 1), 2016 to 2018 Non-Specific Budget (Section 2), and 2015 Budget (Section 3) below.

1. Specific Projects

In this GRC, CWS proposes $74,191,097 for specific projects in 2016 to 2018. These projects include Pipeline Replacement Program, Small and Large Meter Replacement Program, SCADA software and hardware installation, VFD installation, flow meter replacements, generator installations and panel board installations. The following are ORA's recommended disallowances and adjustments.

[1] Gross plant additions include company funded plant additions as well as contributions and advance deposits for specific plant.

a. Pipeline Replacement Program

CWS requests approximately $19,086,675 to replace a total of 81,090 feet of pipeline between 2016 and 2018. ORA evaluated the leak rate, water loss, system age, results of AWWA's recommended pipeline replacement model, historical replacement rate, and replacement cost for each district and provided a detailed evaluation of CWS's pipeline replacement proposal in ORA's Common Plant Issues Testimony (see ORA's Report on Plant – Common Issues). **Table 2-D** below shows ORA's recommendations for pipeline replacement and the associated budgets in this district.

Table 2-D: Pipeline Replacement Program Budget – Bakersfield District

YEAR	PID	ORA's Recommendation		CWS's Proposal	
		Length (ft)	Budget	Length (ft)	Budget
2016	00099239	25,106	$ 3,003,179	27,030	$ 6,205,787
2017	00099241	25,106	$ 3,074,054	27,030	$ 6,360,932
2018	00099243	25,106	$ 3,144,142	27,030	$ 6,519,955
	Total	75,319	$ 9,221,375	81,090	$ 19,086,675

b. Small and Large Meter Replacement Program

Table 2-E below lists CWS's request and ORA's recommendation on small and large meters replacement budgets for Bakersfield District. ORA's recommended budgets are based on detailed analysis and recommendation in its Report on Plant-Common Issues.

Table 2-E: Meter Replacement Budgets – Bakersfield District

District:	Bakersfield		
YEAR	PID	ORA's Recommendation	CWS's Proposal
2016	0900	$ 288,046	$ 413,783
2017	0900	$ 294,844	$ 424,128
2018	0900	$ 301,566	$ 434,731

c. Replace SCADA Software and Hardware (PIDs 99166 and 99267) for $1,532,571 and $291,510 in 2018

CWS proposes to replace SCADA software and hardware for the Bakersfield district with a budget of $1,532,571 in 2018 (PID 99166). CWS also proposes a SCADA project for the North West Water Treatment Plant (NW WTP) with a budget of $291,510 in 2018 (PID 99267). For the reasons presented in ORA's Report on Plant - Common Issues, ORA recommends the Commission disallow the two projects.

d. Flat to Meter Conversions (PIDs 99019, 99021, 102082 and 102083) for a total of $7,481,061 in 2016, (PIDs 99040, 99041, 102087 and 102088) for a total of $7,670,061 in 2017, and (PIDs 99042, 99044, 102089 and 102090) for a total of $7,862,338 in 2018

See ORA's analysis and recommendations on flat-to-metered conversions in its Report on Plant – Common Issues.

e. Automated Metering Infrastructure (AMI) upgrade projects (PIDs: 102111, 102115 and 102116) for a total budget of $3.2 million in 2016, 2017 and 2018.

See ORA's analysis and recommendations on AMR/AMI in its Report on Plant – Common Issues.

f. Water Supply Projects

CWS requests $10.6 million to construct four new wells, a production rack, and a treatment facility in the LOW and North Garden Pressure Zones. The projects are shown in **Table 2-F** below:

Table 2-F: Water Supply Projects in Bakersfield District[2]

Year	Project ID	Project Description	Budget
2016	99719	LOW Zone- Arsenic Treatment at Well 202-01	$ 1,769,484.00
2017	99820	LOW Zone - New Well #1	$ 1,964,470.00
2017	99821	LOW Zone - New Well #2	$ 1,964,470.00
2017	99781	North Garden Zone - Production Rack	$ 833,302.94
2018	98348	North Garden Zone - Well #1	$ 2,013,585.00
2018	99818	North Garden Zone - Well #2	$ 2,013,585.00
		Total	$ 10,558,896.94

CWS stated that the wells and treatment facilities are needed to meet current demands and near term growth.[3] CWS claims that there is a current supply deficit in the LOW Zone of 10,215 gallons per minute (gpm) or 14.7 million gallons per day (mgd).[4] It is ironic that while CWS claims that there is a shortage of water supply in the LOW Zone for existing customers, CWS sent out over 120 "Will Serve Letters" to developers and property owners stating that there is "water available to serve" new developments in 2014 and 2015.[5]

In the North Garden Pressure Zone, CWS claims that there is a current supply surplus but is expected to have a deficit with growth, associated with new development. Table 2-G below summarizes CWS's calculations:

[2] CWS Project Justification Report, page BK PJ-571 to 602, and BK PJ – 674.

[3] Ibid, page BK PJ-585.

[4] Ibid, page BK PJ-585.

[5] CWS Response to ORA Data Request A1507015-JA-010, Attachment Q.2. "Will Serve Letters".

Table 2-G: North Garden and LOW Zone Demand[6]

North Garden and LOW Zone Demand

The results of the focus group meetings and modeling was the determination the immediate water supply needs can be meet with the proposed GRC projects except in two locations. These are the southern end of the LOW zone and the North Garden area. These zones present the location of majority of new residential and commercial development.

Table: Current and Near Term Water Demand

Location	Current Conditions				Near Term Growth	
	Supply Capacity, MGD	MDD, MGD*	MDD Surplus/ Deficit, MGD	MDD Surplus/ Deficit, gpm	Added Demand, gpm	Deficit/ Surplus, gpm
Low Zone	62	95	-14.7	-10,215	800	-11,015
540 Zone	44	25				
North Garden	24	22	2	1313	1800	-487

The LOW Zone consists of the Low Zone and the 540 Zone. According to CWS, the maximum day demand (MDD) in the LOW Zone is 120 mgd, while its wells can supply 106 mgd.[7] In the North Garden Zone, there is 24 mgd of supply with a current MDD of 22 mgd.

[6] CWS Response to ORA Data Request A1507015-SN2-001, Question 3.

[7] See Table 2-G: MDD in LOW Zone = 95+25=120 mgd, Supply capacity at LOW Zone =62+44=106 mgd.

i. LOW Zone

According to CWS, the LOW Zone has MDD of 120 mgd or 83,333 gpm. In response to ORA's data request, CWS provided the historical MDD for the LOW Zone as shown in **Table 2-H** below.

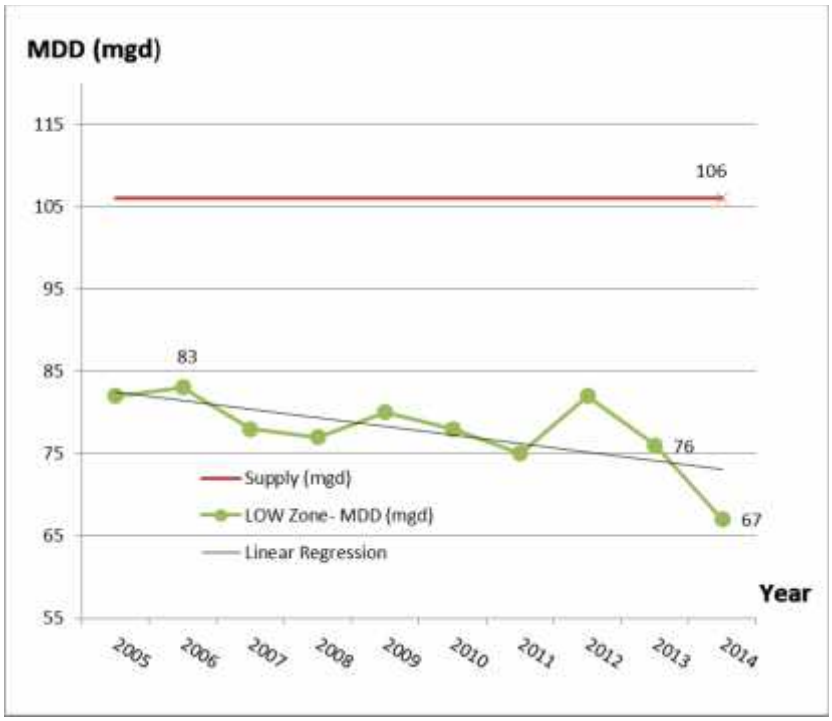
Table 2-H: Maximum Day Demand - LOW Zone[8]

Year	Low Zone Maximum Day Demand (mgd)	540 Zone Maximum Day Demand (mgd)	LOW Zone Maximum Day Demand (mgd)
2005	70	12	82
2006	71	12	83
2007	67	11	78
2008	66	11	77
2009	68	11	80
2010	67	11	78
2011	64	11	75
2012	70	12	82
2013	65	11	76
2014	57	10	67

Based upon the information provided, the highest MDD in the LOW Zone between 2005 and 2014 is 83 mgd from year 2006. The MDD in this zone has never reached the 120 mgd level between 2005 and 2014 that CWS claimed in its project justification (PJ) Report. The current supply of 106 mgd exceeds the highest historical MDD of 83 mgd in the LOW Zone. Moreover, as shown in **Figure 2-A** below, water demand has decreased in recent years to 67 mgd in 2014.

[8] CWS Response to ORA Data Request A1507015-SN2-001, Question 1, Supplemental Data provided via email CWS Kitty Wong to ORA Susana Nasserie, August 28, 2015-7:31 PM.

Figure 2-A: LOW Zone Maximum Day Demand[9]



Furthermore, in 2015, water demand in the Bakersfield district has fallen 35% from 2013 level as a result of the Governor's conservation mandates due to drought conditions.[10] However, given the highest MDD in the 10 year period from 2005 to 2014 was only 83 mgd, the current capacity of 106 mgd would still be enough to meet the demand even if the Governor's drought mandate is lifted during this rate case cycle. Furthermore, maintaining strong conservation programs is the norm, and utilities must still meet the 20% by 2020 mandate, even after the drought restrictions are lifted. Therefore, it is not

[9] CWS Response to ORA Data Request A1507015-SN2-001, Question 1, Supplemental Data provided via email CWS Kitty Wong to ORA Susana Nasserie, August 28, 2015-7:31 PM.

[10] The State Water Resources Control Board June 2015 – September 2015 Cumulative Savings and Urban Water Supplier Conservation Compliance Dataset. http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml

necessary to construct an additional treatment facility and two new wells in the LOW Zone to meet CWS's perceived deficit with a non-existing MDD of 120 mgd.

ii. North Garden Zone

In **Table 2-G** above, CWS showed that the current demand in the North Garden Zone is 22 mgd and the zone has a supply of 24 mgd. ORA disagrees with CWS supply of 24 mgd. The Department of Drinking Water (DDW)'s sanitary survey report indicated that the zone has a supply of 26.1 mgd.[11] Therefore, based on DDW's report the zone has a supply surplus of 4.1 mgd. However, CWS proposes to construct two additional wells in this zone to meet additional demand from anticipated growth due to new development. According to CWS, the anticipated growth requires an additional 2.6 mgd or 1,800 gpm of demand, resulting in a deficit of 0.6 mgd or 487 gpm.[12]

Similar to the historical demand in the LOW Zone, ORA was not able to verify a MDD of 22 mgd that CWS claimed. **Table 2-I** shows the MDD in the North Garden between 2005 and 2014.

[11] November 17, 2014 DDW sanitary survey report for North Garden System No. 1510055, page 9, Table 3: Active Source Capacity.

[12] CWS Project Justification Report, page BK PJ-578, lines 27-35.

Table 2-I: North Garden Zone Maximum Day Demand[13]

Year	North Garden Maximum Day Demand (mgd)
2005	16
2006	16
2007	15
2008	15
2009	16
2010	15
2011	15
2012	16
2013	15
2014	13

As shown in Table 2-I above, the highest MDD in the North Garden Zone is 16 mgd. With 26.1 mgd of available water in the North Garden Zone, there is ample supply to meet the demand in this zone. As a matter of fact, there is a supply surplus of 10.1 mgd or 40% of the available water supply in the zone. This surplus is much higher than the level reported in the DDW report. Therefore, it is not necessary for CWS to construct two wells and a production rack in this zone to meet future demand due to growth. ORA recommends that the Commission deny CWS's request to construct additional wells and the production rack in this zone.

[13] CWS Response to ORA Data Request A1507015-SN2-001, Question 1, Supplemental Data provided via email from CWS Kitty Wong to ORA Susana Nasserie, August 28, 2015-7:31 PM.

iii. Supply for Growth

CWS estimated that the customer growth in the Bakersfield district is 1,567 per year.[14] In order to adequately serve the new customers, CWS needs to construct special facilities such as new wells, booster pump stations, storage tanks, and pipelines. CWS claims that such facilities are either constructed by CWS with developer contributed fund or constructed directly by the developers. In the North Garden Zone, CWS proposes to construct new wells to serve new customers. Currently, CWS books the cost to construct special facilities into rate base and offset the cost with the fund that it collects from developers. Specifically, CWS collects contributions and advances from developers and tracks the balances in the contributed in aid of construction (CIAC) and advances accounts, which are then deducted from rate base.[15] Although this is a reasonable method to account for contributed plants, it is important to ensure that current customers are not subsidizing new developments in the district. Since the water supply projects (**Table 2-F**) are proposed to serve new customers, CWS should collect the contributions and advances from the developers to fund the projects. Therefore, ORA recommends that the Commission deny CWS's request to add $10.6 million to rate base for the new supply projects.

iv. South Bakersfield Water Treatment Plant

Related to the subject of new water supply is a project that CWS initiated prior to the 2012 GRC. CWS originally planned to construct a surface water treatment plant (SBKWTP) in South Bakersfield in a joint partnership with the City of Bakersfield (City). However, CWS and the City have abandoned the plan to construct the SBKWTP

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[14] CWS Results of Operation Report for Bakersfield District, Attachment A, page 5. Table 4 Services. Annual customer growth = 72,490-70,923= 1,567.

[15] CWS Response to ORA DR A1507015-JA-010, Question 5.

because there is a limited source of surface water available in South Bakersfield.[16] In the 2012 GRC, CWS included $4,676,312 in its Plant Held for Future Use Account in its workpaper for Bakersfield. CWS claimed that the amount represents the design costs for the treatment plant.[17] In the current GRC, CWS has determined that it is no longer feasible to construct the SBKWTP as planned and proposes to remove the cost from rate base and amortize the costs in expense, as an extraordinary loss, over the next ten years.[18] ORA addresses CWS's proposal to recover the cost of this project in its Report on Operating Expense.

It should be noted that CWS has not sought Commission approval for the construction of the SBKWTP[19] and; therefore, did not have authorization to construct it. Although CWS incurred $4.6 million for the design cost of the treatment plant, the project was never "used and useful" and will not be "used and useful"[20] because the availability of surface water in the south Bakersfield area is limited. Not only did CWS forge ahead with a project that has not been reviewed and authorized by the Commission, CWS imprudently incurred $4.6 million to design a surface water treatment plant at a location where surface water has limited availability. Moreover, CWS has determined that it is no longer "feasible" to construct the SBKWTP as designed.[21] This means that the $4.6 million CWS has expended to design a project that is no longer needed will not provide any

[16] CWS Response to ORA DR A1507015-PXS-010, Question 4.

[17] CWS Results of Operation Report, Bakersfield District, page 51.

[18] CWS Results of Operation Report, Bakersfield District, page 51.

[19] Email from CWS's Kitty Wong to ORA's Patricia Esule on October 29, 2015 at 6:50PM PT (on file with author).

[20] CWS Response to ORA DR A1507015-PXS-010, Question 4.

[21] CWS Response to ORA DR A1507015-PXS-010, Question 4.

benefit to ratepayers in Bakersfield. Therefore, ratepayers should not pay for CWS's lack of planning and foresight. ORA recommends that the Commission deny CWS's request to recover any cost related to the SBKWTP.

g. Generator Replacements (PIDs 98810, 98847, 99140 ,98047, 98844, and 98850) for $1,875,922 in 2017 and 2018

CWS proposes to install six generators[22] for a budget of $1,875,922 in 2017 and 2018. Table 2-J summarizes CWS's request budget for generators in the Bakersfield districts.

Table 2-J: CWS's Generator Budget – Bakersfield District

Year	Project ID	Project Description	Budget
2017	98810	Replace existing auxiliary engine at Sta. 156 with 150 kW generator	$ 198,948
2017	98847	Replace existing auxiliary engine at Sta. 150 with 150 kW generator	$ 198,948
2017	99140	New generator for the raw water pumping plant at the NE WTP, Sta. 215	$ 858,709
2018	98047	Replace existing auxiliary engine at Sta. 157 with 150 kW generator	$ 206,439
2018	98844	Replace existing auxiliary engine at Sta. 49 with 150kW generator	$ 206,439
2018	98850	Replace existing auxiliary engine at Sta. 116 with 150 kW generator	$ 206,439
		Total	$ 1,875,922

In its Report on Plant – Common Issues, ORA provided a discussion of CWS's budgets and ORA's general approach for generator replacements. ORA also reviewed each proposed generator in each zone. The Bakersfield district consists of multiple pressure zones. In this GRC, CWS proposes to install generators in 3 zones (Low Zone, 880 Zone and North East area/zone). CWS has a total of 14 permanent generators in those zones and one portable generator for the entire district of Bakersfield.[23]

In response to ORA's data request, CWS provided 2013 to 2014 engine logs for the

[22] CWS Project Justifications Report also identifies generator as auxiliary engine. Example: CWS's PJ Report Page VIS PJ-247, see the project title and project description.

[23] CWS Response to ORA Data Request A1507015-SN2-004, Q.1.e and Q.3

existing generators that are located at the Stations 49, 150, 156, 157 and 116, however, no engine log was provided for the generator at Station 215 because CWS proposes to install a new generator at this station.[24] **Table 2-K** summarizes numbers of existing permanent generators and portable generators in the Low Zone, Zone 880, and North East Zone, including its utilization in 2013 and 2014.

Table 2-K: 2013-2014 generator utilization [25]

Zone	Station	2013 to 2014 Generator Utilization	Permanent Generators in each Zone
Low	49	10 minutes in the last 2 years	11
Low	150	0	
Low	156	0	
Low	157	0	
880	116	10 minutes in the last 2 years	1
North East	215	No Generator	2
Portable Generators in the district			1

In its response to ORA's data request, CWS also provided data of the 2013 to 2014 generator utilization [26] of the existing generators that are proposed to be replaced. The utilization is the hours of generators being used for emergencies or power outages. CWS provided this utilization hours in its engine logs. As summarized on **Table 2-K**, utilization hours were only available for generators at two stations (Stations 49 and 116). Moreover, CWS was only able to provide the utilization data for the last two years even

[24] CWS Response to ORA Data Request A1507015 SN2-004, Q.1.a. See Attachment SN2-004 Q1 (a) run logs for Bakersfield district. CWSs Project Justification Report, pages BK PJ – 651, Line 120.

[25] Ibid, Q.1.a. See Attachment SN2-004 Q1 (a) run logs for Bakersfield district.

[26] CWS Response to ORA Data Request A1507015 SN2-004, Q.1.a ORA requested for 2005 to 2014 utilization data however, CWS provides only the 2013 to 2014 data for all generators except for data for station 215.

1 though ORA requested the information from the last 10 years.[27] The lack of information
2 makes it difficult, if not impossible, for ORA to verify the need of these facilities and
3 demonstrates CWS's dismal effort at record keeping.

4 Based on ORA's analysis explained below, CWS's request should be denied for the
5 following reasons:

6 ***Stations 49, 150, 156, 157 at Low Zone and 116 at Zone 880:*** According to CWS, the
7 generators at these stations are old, the engines occasionally failed, leaks occur, parts are
8 difficult to obtain and the maintenance costs are increasing.[28] However, the maintenance
9 records for the generators indicate that CWS has been able to resolve the issues with the
10 generators and maintain the generators in operating conditions.[29]

11 Although CWS claims that maintenance costs have been increasing, CWS did not present
12 any evidence to substantiate this claim either in the filing or in response to ORA's data
13 request. CWS even stated that records of annual expenditures for maintenance activities
14 are not available.[30] Without any records of maintenance cost, it is unclear how CWS was
15 able to conclude or make any legitimate claim that maintenance costs have been
16 increasing.

17 Records of generators usage indicate that generators at two out of five stations were used
18 for 10 minutes in a two year period (2013-2014) and power outages in these zones are

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[27] CWS Response to ORA Data Request A1507015 SN2-004, Q.1.d

[28] CWSs Project Justification Report, pages BK PJ – 354, BK PJ – 358, BK PJ – 362, BK PJ – 366, and BK PJ – 371.

[29] CWS Response to ORA Data Request A1507015 SN2-004, Q.1.a See Attachment SN2-004 Q1(b) for Bakersfield district inspection/maintenance reports.

[30] CWS Response to ORA Data Request A1507015 SN2-004, Q.1.d CWS stated that "No annual historical data is available summarizing the costs…"

infrequent.[31] The lack of usage and occurrence of power outages in the Low and 880 Zones do not support a need to replace five permanent generators at a cost of $1.02 million. Therefore, ORA recommends that the Commission deny CWS's request for permanent generators.

Station 215 in North East Area/Zone: The Raw Water Pumping Plant (RWPP) is located at Station 215. The water treated at the RWPP is pumped into a clear well. CWS claims that the installation of a new generator will allow continuous water pumping to the clear well during extensive outages. According to CWS, without the new generator, the clear well can only hold and deliver water to the North East (NE) treatment plant for a maximum of 10 hours. In its justification, CWS discussed an option to consider smaller generators and booster pumps at the well sites.[32] This option will also ensure continued water pumping to the clear well. However, CWS chooses the option of installing the permanent generator because CWS believes the large generator at RWPP would ensure the water system will be able to provide the production of 11 mgd and the construction cost would be cheaper than the smaller generators and booster pumps option.[33] CWS did not consider that the recent demand has been decreasing, which makes it unnecessary for the plant to produce 11 mgd at this time. CWS's Response to ORA DR JA-001 Question 2 shows that the daily production between 2003 and 2015 varies from 7 mgd to 13 mgd. However, in recent years of 2014 and 2015, the NE Treatment Plant only produced 7 to 8 mgd. The availability of variable pumping option may be more economically feasible than installing a large generator.

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[31] CWS Response to ORA Data Request A1507015 SN2-004, Q.1.a. See Attachment SN2-004 Q1 (a) run logs for Bakersfield district.

[32] CWS Project Justification Report, page BK PJ – 650, Lines 125 to 127.

[33] CWS Project Justification Report, page BK PJ – 651, Lines 129 to 135.

ORA disagrees with CWS's approach. CWS did not include the cost benefit analysis comparing the two options to justify CWS's selected option as the most cost effective option. ORA also discovered that in the General Office, CWS has a number of portable booster pumps available. This fact has not been presented to ORA to assess whether these boosters can be utilized for one of the two options presented.

ORA found that in 2012 and in 2013, there were power outages that lasted for 10.1 hours and 9.6 hours, respectively. CWS was able to manage the situation as CWS stated in its Project Justification (PJ) Report that the company was able to handle the situation using the most conservative pumping.[34]

At this time CWS should look into options that are more cost effective, rather than installing a generator for $860,000. For the above reasons, ORA recommends the Commission deny this project.

h. Replace Galvanized Metal Buildings and Panelboards at station 42, 45, 89 and 129 (PIDs 97994, 98008, 9844 and 99274) for $2,078,280 in 2017 and 2018

CWS proposes to replace four galvanized metal buildings and panelboard at Stations 42, 45, 89, and 129 in the Bakersfield district.[35] **Table 2-L** summarizes the proposed project's budget for a combined total of $2,078,280 in 2017 and 2018. The projects include replacing the metal buildings and panelboards with new concrete buildings and

[34] CWS Project Justification Report, page BK PJ – 650, Lines 117 to 118.

[35] Ibid, pages BK PJ – 609 to 641. CWS explained about the scope of metal buildings and panelboard replacements at the four stations: 42, 45, 89 and 129.

new panelboards, as well as modifying its piping.[36] According to CWS, the existing buildings provide shelter for well pumps, booster pumps, panelboard and SCADA equipment. Other than replacing the metal buildings, CWS also proposes to move the pumps or panelboard out from its buildings when CWS believes necessary.[37]

Table 2-L: Galvanized Building Projects in Bakersfield District[38]

Year	Project ID	Project Description	Budget
2017	98444	BK 89 Galvanized Metal Building removal and replacement, station piping change, and panelboard replacement.	$ 542,697
2017	98008	BK 45 galvanized metal building and panelboard removal and replacement with outdoor station/panelboard	$ 526,487
2017	99274	Remove galvanized metal building and panelboard. Replace with outdoor panelboard and acoustic shelter. (St. 129)	$ 452,831
2018	97994	BK STA 42 galvanized metal building removal and replacement, station piping change and panelboard replacement.	$ 556,265
		Total	$2,078,280

According to CWS, the 55 to 65 years old metal buildings are in a deteriorating state. CWS claims that the building interiors are deteriorating due to age and from chlorine chemical storages prior to installing the chemical systems outside and the buildings' exterior paint is peeling and flaking, which could lead to the risk of lead exposure to the environment and the public.

During the site visit, ORA observed that the buildings have peeling and flaking paint. However, ORA disagrees with CWS's proposal to replace the buildings. ORA found that CWS provided no comprehensive study seeking the most economical approach to replace

[36] CWS Project Justification Report, pages BK PJ – 609 to 641. CWS explained that modifying some pipes will be needed in some stations.

[37] Ibid, pages BK PJ – 609 to 641. CWS proposes to move pumps or panelboards out from its galvanized buildings at Stations 45 and 129.

[38] Ibid, page BK PJ-22 to 26: Section B. Proposed Project list. Table: Capital Project List.

the building. For example: for Station 42, CWS included a cost estimate of approximately $102,000 for a new 15 ft. x 16 ft. concrete building,[39] which is equivalent to a unit cost of $423.9[40] per square foot.

In its PJ Report, CWS does not consider other metal buildings, which may have better material and quality compared to the current galvanized metal buildings built 65 years ago. The current metal buildings may be suitable and less expensive compared to the concrete building. For example, ORA's analysis discovered that a 30 ft. x 36 ft. or a 40 ft. x 60 ft. metal building [41] have cost ranges from $8,000 to $13,000,[42] see **Figure 2-B**. The metal buildings cost approximately $5.0 to $7.4 per square foot. This metal building unit cost is ($423.9/$7.4) = 57 times cheaper compared to concrete building cost of $423.9 per square foot. ORA does not suggest CWS specifically implement this steel building, however, this example illustrates that CWS had not presented other building alternatives with more reasonable costs. It is important to note that there are a total of 56 galvanized buildings in Bakersfield district that CWS considers replacing in this and future GRCs.[43] It would cost ratepayers approximately 56 x $500,000=$28 million, if CWS does not consider more reasonable cost options. ORA found that there is a

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[39] CWS Project Justification Report, page BK PJ – 611, Capital Project Cost Estimate: CWS included a cost estimate of Stone Block Building 15' x 16' for $101,737.

[40] $101,737/(15'x 16') = $423.9 per square foot.

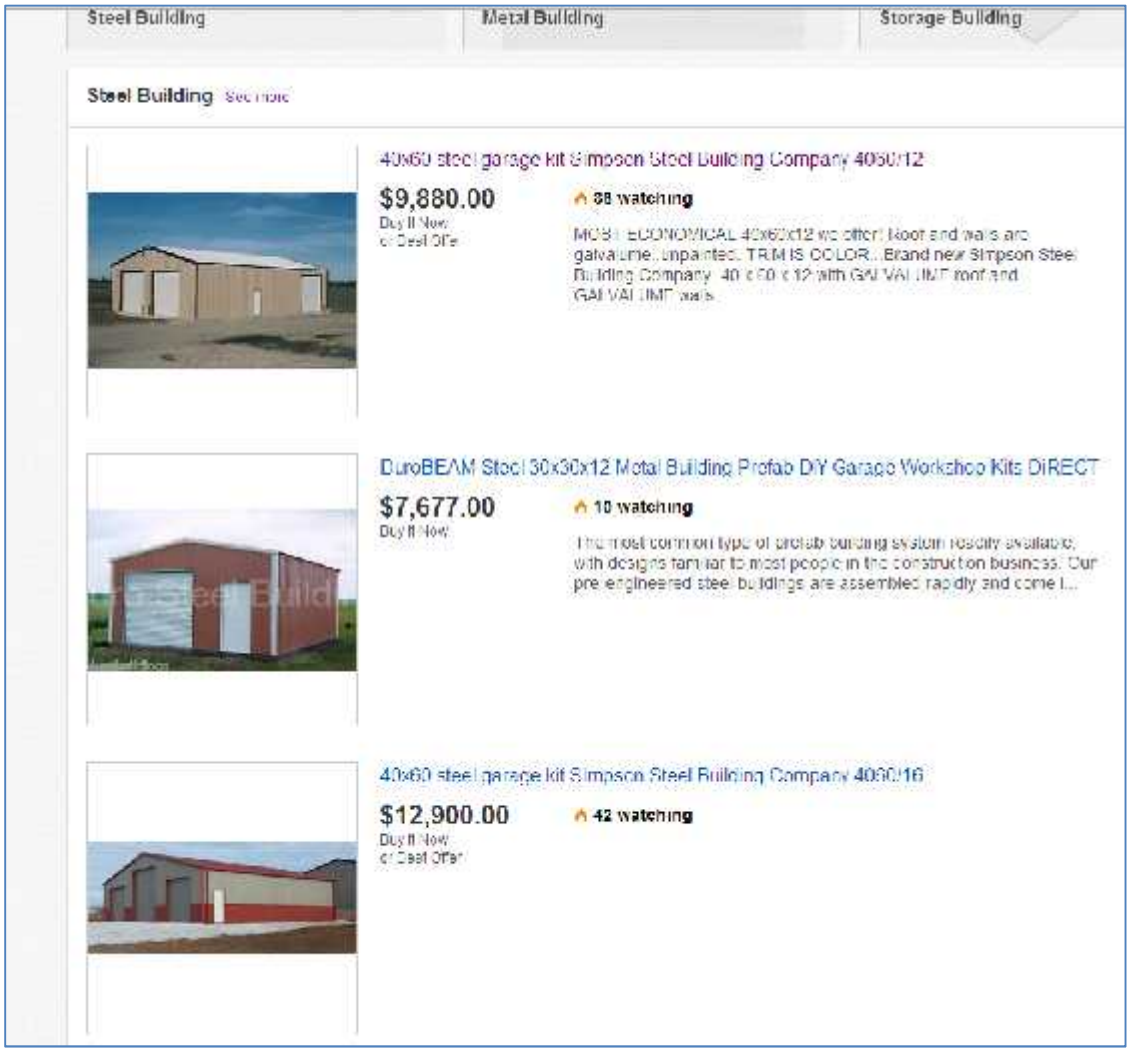
[41] The internet also shows different sizes and types of metal buildings which are prefabricated or customized that are available from different companies. For example in the internet ORA found: the Simpson Steel building company: http://www.simpsonsteel.com/ or Rhino steel building systems company: http://www.rhinobldg.com/

[42] Illustration for other metal building options with more reasonable cost than CWS proposed for $424/sq. ft. See eBay website: http://www.ebay.com/bhp/building. The picture ORA captured on December 5, 2015.

[43] CWS Response to ORA Data Request A1507015-SN2-018, Question 1.b. CWS provided a list of 56 metal buildings with the largest size of 12 ft. x 28 ft.

possibility for ratepayers funding only (56 x $8,000) =$448,000, which is even lower than $1 million if CWS seeks low cost building alternatives.

Figure 2-B: Metal Building sizes and costs



[44]

[44] Illustration for other metal building options with more reasonable cost than CWS proposed for $424/sq. ft. See eBay website: http://www.ebay.com/bhp/building ORA captured this illustration on December 5, 2015.

CWS also stated that most of these stations have original panelboards with some updated components. Multiple upgrades to the panelboards over the years, including its electrical components, starters, motor and main breakers have taken up additional space; therefore, the size of existing buildings will not be able to accommodate any pumps or other panelboard upgrades as the buildings have reached full space capacity. Therefore, CWS asserts that new panelboards are needed.[45]

ORA disagrees with CWS's request to replace the panelboards that seem to be driven by the building space. CWS did not indicate that the panelboards have any malfunction issues and any need for further upgrades. In its response to ORA data requests, CWS also did not indicate that the company had received any violation notices from a regulatory agency regarding any issues with the panelboards.[46] Therefore, ORA finds that there is no urgency and it is unnecessary for CWS to replace the panelboards at this time.

Based on the above findings, CWS has not completed its due diligence to seek the most cost effective building and panelboard replacements. Also, ORA finds that there is no need to replace the panelboards at this time. ORA found it is reasonable to adjust the building replacement cost of $8,000 per unit. Therefore, ORA recommends the Commission adopt the four projects to replace the galvanized buildings of $34,671 in 2017 and $11,846 in 2018.[47]

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[45] CWS Project Justification Report, page BK PJ – 609, Lines 25 to 30. CWS explained why a new panelboard is needed at sta.42. CWS used similar explanation for replacement of panelboard for sta. 45 (BK PJ – 617, Lines 26-30), for sta. 89 (BK PJ-630, Lines 30-35) and for sta. 129 (BK PJ-638, Lines 28-32).

[46] CWS Response to ORA Data Request A1507015-BYU-008, Question 1.b.

[47] See **Appendix A**. ORA's calculation of Galvanized Building Replacement Estimates.

i. Booster Station and Panelboard Rebuild at Station 196 (PID 100781) for $689,841 in 2016

CWS proposes to replace four booster pumps and a panelboard at Station 196 in the North Garden area of the Bakersfield district for $689,841 in 2016.[48] The project includes replacing four booster pumps with one booster pump with a capacity of 600 gpm, replacing a pneumatic tank with a Variable Frequency Drive (VFD), replacing panelboard, remote terminal unit (RTU) panel, generator and its automatic transfer switch (ATS), and also modifying the pipe and valves that are required for the booster pump installation.[49] CWS states that currently the four existing booster pumps cannot be operated to accommodate the higher pressure needed in the system that has changed due to North Garden area demand growth.[50] Therefore, the production well cannot achieve the maximum capacity with the current booster pumps and piping configuration. [51] CWS asserts that due to supply concerns in the Bakersfield district, the company intends to maximize the well supply at this station. [52]

ORA disagrees with this project. Contrary to CWS's claim, ORA found that the North Garden area has a surplus supply.[53] As stated in Section 1.f. Water Supply Projects previously, the 2013 MDD in the North Garden District is 15 mgd while there is 26.1 mgd of supply in the system. In fact, the surplus in 2013 was 11.1 mgd or 42.5% of its

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[48] CWS Project Justification Report, page BK PJ – 682, Lines 26 to 31.

[49] Ibid, page BK PJ – 682, Lines 11 to 19 and BK PJ-684.

[50] CWS provides no further explanation or supporting documentation to substantiate this claim of the "higher pressure issues due to growth in the North Garden area". ORA cannot verify this claim.

[51] CWS Project Justification Report, page BK PJ – 682, Lines 26 to 31.

[52] Ibid, page BK PJ – 682, Lines 26 to 31.

[53] See ORA explanation on Specific Project, section f. Water Supply Projects: North Garden Zone/Area.

supply capacity. [54] ORA has not included the calculation of the 32% state mandatory conservation for the Bakersfield district that requires customers to reduce usage. Including the mandatory conservation reduction, CWS will have a surplus of 11.1 mgd + 32% of 15 mgd demand [55]= 11.1 + 4.8 = 15.9 mgd. Therefore, it is unnecessary to upgrade this station to supply a capacity of 600 gpm (0.9 mgd) at this time.[56] For the above reasons, ORA recommends the Commission deny this project.

j. Pump Replacements projects for $995,724 in 2016, 2017and 2018

CWS proposes 12 pump and motor replacement projects for a total budget of $995,724 in 2016, 2017 and 2018. CWS asserts the replacement pumps are needed for its efficiency improvements.[57] **Table 2-M** shows ORA's recommendation and CWS's proposed budget.

[54] The North Garden area: Supply Capacity: 26.1 MGD, 2013 demand:15 MGD, Surplus supply: 26.1 - 15 MGD= 11.1 MGD. This surplus is 11.1/26.1= 0.425 or 42.5% of its supply capacity.

[55]CWS Response to ORA Data Request A1507015-SN2-001, Question 1, Supplemental Data provided via email CWS Kitty Wong to ORA Susana Nasserie, August 28, 2015-7:31 PM.

[56] North Garden area/district excess supply is 15.9 mgd, the proposed supply from station 196 is 0. 9 mgd. (600 gpm = 600 x 60 x 24 = 864,000 gallon per day (gpd) which equal to (864,000 gpd /1,000,000) = 0.864 mgd ~ 0.9 mgd) It is not necessary to upgrade the station to increase supply.

[57] CWS Project Justification Report, page BK PJ – 7 and 8 and CWS's electronic Workpapers: Excel spreadsheet (Bakersfield Discovery 2015.xlsx).

Table 2-M: Pump Replacements Budgets - Bakersfield District[58]

Year	Project ID	Project Description	Overall Plant Efficiency	Efficiency Rating	ORA's Recommendation	CWS's Proposal
2016	00098072	Replacement of pump and motor at Sta. 100 -F.	52.68	LOW	$ 67,092	$ 67,092
2016	00098074	Replacement of pump and motor at Sta. 87-D.	47.03	LOW	$ 52,607	$ 52,607
2016	00098075	Replacement of pump and motor at Sta. 96 -A.	58.55	GOOD	$ -	$ 52,607
2016	00098077	Replacement of pump and motor at Sta. 156 -1.	66.21	GOOD	$ -	$ 104,082
2016	00098078	Replacement of pump and motor at Sta. 157 -1.	58.74	FAIR	$ -	$ 121,297
2016	00098079	Replacement of pump and motor at Sta. 188 -B	33.78	VERY LOW	$ 52,607	$ 52,607
2016	00098081	Replacement of pump and motor at Sta. 216 -A	60.2	FAIR	$ -	$ 191,174
2016	00098084	Replacement of pump and motor at Sta. 216 -C	52	LOW	$ 94,287	$ 94,287
2017	00098092	Replacement of pump and motor at Sta. 116-F	57.22	LOW	$ 68,769	$ 68,769
2017	00098093	Replacement of pump and motor at Sta. 221-L	50.55	LOW	$ 58,917	$ 58,917
2018	00098094	Replacement of pump and motor at Sta. 176-E	47.98	VERY LOW	$ 71,896	$ 71,896
2018	00098096	Replacement of pump and motor at Sta. 218 -E	58.98	GOOD	$ -	$ 60,390
				Total	$ 466,174	$ 995,724

[59]

Pumps and motors should only be replaced when efficiency tests justify the need of replacement. In its Report on Plant – Common Issues, ORA presents CWS's and ORA's pump and motor replacement approaches and proposals.

In response to ORA's data request, CWS provided pump test performance results from 2011 to 2014 for each pump in the district.[60] Based on the available pump test results, ORA's recommends seven pump replacements for those with low and very low ratings, as shown on **Table 2-M**.

[58] CWS Response to ORA Data Request A1507015 DG-024, See Excel spreadsheet Attachment DG-024-2-a (MDR II F 8 Pump Efficiency).xlsx CWS provided Plant Efficiency and Efficiency Rating for these pumps.

[59] Ibid, CWS provides no justifications for project under $100,000. On its Workpapers Tab no WP8B5a – column justification detail CWS also did not provide other necessary information to justify that the pumps are warrant for replacements such as station numbers and efficiency ratings. In its response to this data request, CWS provided information of station number, pump id and the pump capacity. See Attachment DG-024-1-a.

[60] Ibid, See Excel spreadsheet Attachment DG-024-2-a (MDR II F 8 Pump Efficiency).xlsx

k. Panelboard Replacement at Station 81 (PID 99199) for $321,145 in 2017

CWS proposes to replace an indoor panelboard to an outdoor location at Station 81 for $321,145 in 2017. CWS states that the 63 years old indoor panelboard is mounted on the floor, has rust damage, and can expose its employees to safety hazard in the event of leaks from the motor/pump located inside the pump house. CWS claims that exact replacement parts are difficult to obtain, and due to age, the panelboard components need frequent repairs/modifications, which are becoming costly. CWS also claims that the existing panel board cannot accommodate replacement or upgrades to pump and/or motors size as it has reached its full capacity in terms of space. Therefore, according to CWS, the indoor panelboard need to be replaced with an outdoor panelboard.[61]

CWS's May 2009 panelboard's inspection/maintenance report for station 81 did not identify any part replacements or repairs. It stated that there are no signs of water intrusion, and routine preventive maintenance activities were completed.[62] There is no record of needed repairs or modifications since 2004,[63] indicating that the panel board has been operating sufficiently for the last 10 years.

In addition, contrary to the CWS's claim regarding the frequent panelboard's repairs/modifications that are costly, CWS does not have any records of panelboard

[61] CWS Project Justification Report, page BK PJ – 373 to 374.

[62] CWS Response to ORA Data Request A1507015 SN2-016, Q.2 for Panelboards in Bakersfield district. See ATTACHMENT_SN2-016-1-b-2_BKSta81_Maint_form.pdf

[63] Ibid, Q.1 for Panelboards in Bakersfield district. See Attachment_SN2-016-1-a-1 (BK_panelboard_PM_WO).xlsx

repair costs.[64] The information provided by CWS does not substantiate its claims for the needs to replace the panelboard due to frequent repairs, water intrusion issues or panelboard expansion.[65] Therefore, ORA recommends the Commission deny this project.

l. Hydro-Pneumatic Tank Replacements at four Stations for $833,255 in 2016, 2017 and 2018 (PIDs 97762, 97728, 9789, and 998124)

CWS proposes to replace four hydro-pneumatic tanks at Stations 96, 100, 116 and 206 for $833,355 in 2016, 2017 and 2018. The four projects are summarized in **Table 2-N** including ORA's recommendation and CWS's request.

Table 2-N: Hydro-pneumatic Tank Replacements Budgets - Bakersfield District[66]

Year	Project ID	Project Description	ORA's Recommendation	CWS's Proposal
2016	97762	Replace the existing 10,000 gal pressure tank,at Sta. 100 which was installed in 1954.	$ -	$ 221,860
2017	97728	Replace existing 5,000 gallon pressure tank at Sta. 96	$ -	$ 150,993
2017	97899	Replace the existing 10,000 gal pressure tank at Sta. 116, which was installed in 1953.	$ -	$ 227,411
2018	98124	Replace ex 9,500 gal pressure tank at Sta. 206*	$ 233,092	$ 233,092
		Total	$ 233,092	$ 833,355

**CWS's Workpapers identified the project for sta. 83, instead of sta.206.*

[64] CWS Response to ORA Data Request A1507015-BYU-008, Question 1.a.

[65] CWS did not identify specific projects associate with upgrading pump and motors that requires the panel board expansion.

[66] CWS Project Justification Report, page BK PJ-311, Line 12 and Workpapers, Tab WP8b5a. On the Tab WP8b5a, CWS associated PID: 98124 with Station 83. In its PJ Report PID 98124 refers to Station 206. Based on the CWS provided information, ORA refers PID 98124 for Station 206.

In its Report on Plant – Common Issues, ORA provided a general discussion on CWS's proposal to replace pneumatic tanks. In the following section, ORA provides discussion on the specific request in the Bakersfield District and evaluations/reports from a consultant service (Mistras Group Inc.) that CWS hired to review the tank conditions.

Station 96: According to Mistras, the hydro-pneumatic tank at Station 96 has an estimated life of 129.9 years with an operating pressure below 100 psi.[67] The existing tank is 62 years old and is operated at a maximum pressure below 70 psi.[68] The tank at Station 96 has not reached the end of its useful life and is operating under the recommended pressure. Therefore, ORA recommends the Commission deny CWS's request to replace the hydro-pneumatic tank at Station 96.

Station 100: According to Mistras, the hydro-pneumatic tank at Station 100 has an estimated life of 86 years with an operating pressure below 125 psi.[69] The existing tank is 61 years old and is operated at a maximum pressure below 94 psi.[70] The tank at Station 100 has not reached the end of its useful life and is operating under the recommended pressure. Therefore, ORA recommends that the Commission deny CWS's request to replace the hydro-pneumatic tank at Station 100.

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[67] CWS Response to ORA Data Request A1507015 JMI-010, Q.1.a: See Report BK_096-PT1_Mistras_Inspection(07-25-2011).pdf. Page 15, in this page, it also stated the system is assumed to be 58 years in service.

[68] Ibid, Q.1.f.

[69] Ibid, Q.1.a: See Report BK_100-PT1_Mistras_Inspection(07-26-2011).pdf. page 12, in this report, it also stated the system is assumed to be 57 years in service.

[70] Ibid, Q.1.f.

Station 116: According to Mistras, the hydro-pneumatic tank at Station 100 has an estimated life of 74 years with an operating pressure below 125 psi.[71] The existing tank is 61 years old and is operated at a maximum pressure below 112 psi.[72] The tank at Station 116 has not reached the end of its useful life and is operating under the recommended pressure. Therefore, ORA recommends the Commission deny CWS's request to replace the hydro-pneumatic tank at Station 116.

m. Tank Seismic Retrofit at Stations 194, 164 and 210 (PIDs 98992, 98966, and 99527) for $320,490 in 2016 and 2018

CWS proposes to seismic retrofit the inlet and outlet of 3 tanks: tank-T1 at Station 194, tank-T1 at Station 164 and tank-T1 at Station 210. Table 2-O summarizes the projects with a total budget of $ 332,490 in 2016 and 2018.

Table 2-O: Seismic Retrofit Projects in Bakersfield District[73]

Year	Project ID	Project Description	Total
2016	00098992	Seismic retrofit of the storage tank inlet and outlet at Sta. 194 T1 with EBAA Flex Tend connection.	$ 94,517
2018	00098966	Seismic upgrade, inlet and outlet pipe, of Tank T1 at Station 164	$ 140,302
2018	00099527	Seismic retrofit of the storage tank inlet and outlet with EBAA Flex Trend connections Sta.210-T1. Inlet and outlets are 12-inches in diameter and 16-inches in diameter respectively.	$ 148,886
		Total	$ 322,490

[71] Ibid, Q.1.a: See Report BK_116-PT1_Mistras_Inspection_(07-25-2011).pdf. Page 14, in this page, it also stated the system is assumed to be 58 years in service.

[72] CWS Response to ORA Data Request A1507015 JMI-010, Q.1.f.

[73] CWS Project Justification Report, page BK PJ-522, BK PJ – 529 and BK PJ – 23.

According to CWS, the tanks at these stations need to be retrofitted to conform with AWWA D100-05, Section 13.6 which states that the design of the piping system connected to the tank shall consider the potential movement of the connection points (piping to tank) during earthquakes and shall provide sufficient flexibility to avoid release of the tank content due to failure of the piping/tank connecting system.[74] However, AWWA D100-05, Section 13.6 is a recommended standard for the new tank construction and does not apply to existing tanks. Therefore, ORA recommends the Commission deny the project with PIDs 98992, 98966, and 99527.

n. Replace flow meters at 9 stations for $367,287 in 2017 (PID 98696)

CWS proposes nine flow meter replacements and its vault constructions at nine stations: Stations 45, 73, 87, 100, 116, 176, 186, 194 and 196 for $367,287 in 2017.[75] CWS stated that the existing flow meters at these stations contain mechanical components are worn and need to be replaced.[76] CWS also explained that these flow meters do not comply with the National Science Foundation (NSF) testing and certification standards. [77] However, this is not a requirement for flow meters installed before March 2008.[78]

For reasons identified in the ORA's Report on Plant - Common Issues on flow Meters and its analysis below, ORA removes the budgets of the flow meters and the associated vault constructions at the nine stations from this GRC's capital budgets.

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[74] CWS Project Justification Report, page BK PJ-522, lines 29-34 and BK PJ – 529, lines 30 -35.

[75] Ibid, page BK PJ –654 to 656 and CWS Response to ORA Data Request A1507015 SN2-012, Q.2.d.iv, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xls for see flowmeters for Bakersfield district.

[76] Ibid, page BK PJ –654, Lines 24-26.

[77] Ibid, page BK PJ –654, Lines 26-27.

[78] CWS Response to ORA Data Request A1507015-SN2-012 question No. 2-d. iii.

CWS's maintenance and repair records for flow meters at Stations 45, 73, 87, 100, 116, 176, 186, 194 and 196 [79] indicate that any issues experienced at these stations have been resolved[80] and the flow meters are functioning with no additional action needed.[81]

Based on the above findings, ORA disagrees with CWS's proposal to replace old but otherwise functioning flow meters. Therefore, ORA recommends the Commission deny the project.

o. Replace Remote Terminal Unit (RTU) for $322,490 in 2016, 2017 and 2018 (PIDs 98674, 98679, and 98688)

CWS proposes to replace fifteen Remote Terminal Unit (RTU) for a total of $322,490 in 2016, 2017 and 2018. Consistent with its analysis and recommendations on SCADA in its Report on Plant – Common Issues, ORA recommends that the Commission deny CWS's request for RTUs.

p. Security Cameras for Northeast Water Treatment Plant (99297) for $123,852 in 2016

CWS proposes to upgrade six existing security cameras at the Northeast Water Treatment Plant (NE WTP) and add two new cameras in the area of its raw water pumping plant

[79] CWS Response to ORA Data Request A1507015 SN2-012, Q.2.d.i, and Q.2.d.ii , Excel spreadsheet attachment A1507015-SN2-012_q_-e-1.xls for Bakersfield district.

[80] Ibid, Excel spreadsheet attachment A1507015-SN2-012_q_e_1.xls shows flowmeters maintenance records

[81] Ibid, Excel spreadsheet attachment A1507015-SN2-012_q_e_1.xls shows flowmeters maintenance records.

(RWPP) for $123,852 in 2016.[82] CWS stated that the current security cameras provide poor resolution. In addition, these cameras are no longer manufactured and they are unreliable and unmaintainable. The RWPP does not have any type of security, and for this reason, CWS requests to upgrade its cameras in the Northeast treatment plant facility and add cameras at the RWPP. [83]

As shown in **Table 2-P** below, CWS provided a cost estimate for this project.

Table 2-P: Security Camera Project Cost Estimate [84]

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
Installation labor: 2 locations @ $3,400 per location	[EA]	2	$3,400.00	$6,800.00	Attachment A
CWS Labor	CW-LABOR-FIELD MGR/SUPV [HR]	16	$94.44	$1,511.04	Similar Projects
Video surveillence equipment	[LS]	1	$74,765.00	$74,765.00	Attachment A
10% contingency		1	$8,307.00	$8,307.00	
			Sub Total	$91,383	
			Construction Overhead (29%)	$26,501	
			Base Cost	$117,884	
			Escalation Amount (2.5% / yr)	$5,968	
			Total Budget Amount	$123,852	

CWS's cost estimate for purchasing and installing the eight cameras is very high. Specifically, ORA found that CWS did not present any comparison costs and alternatives, other than proposing the surveillance video equipment for $75,000, which will be

[82] CWS Project Justification Report, pages BK PJ-413 to 414. During the site visit, CWS explained that the company will install a total of 8 security cameras, to replace 6 existing outdated cameras for the NEWTP and to add 2 new cameras at the RWPP.

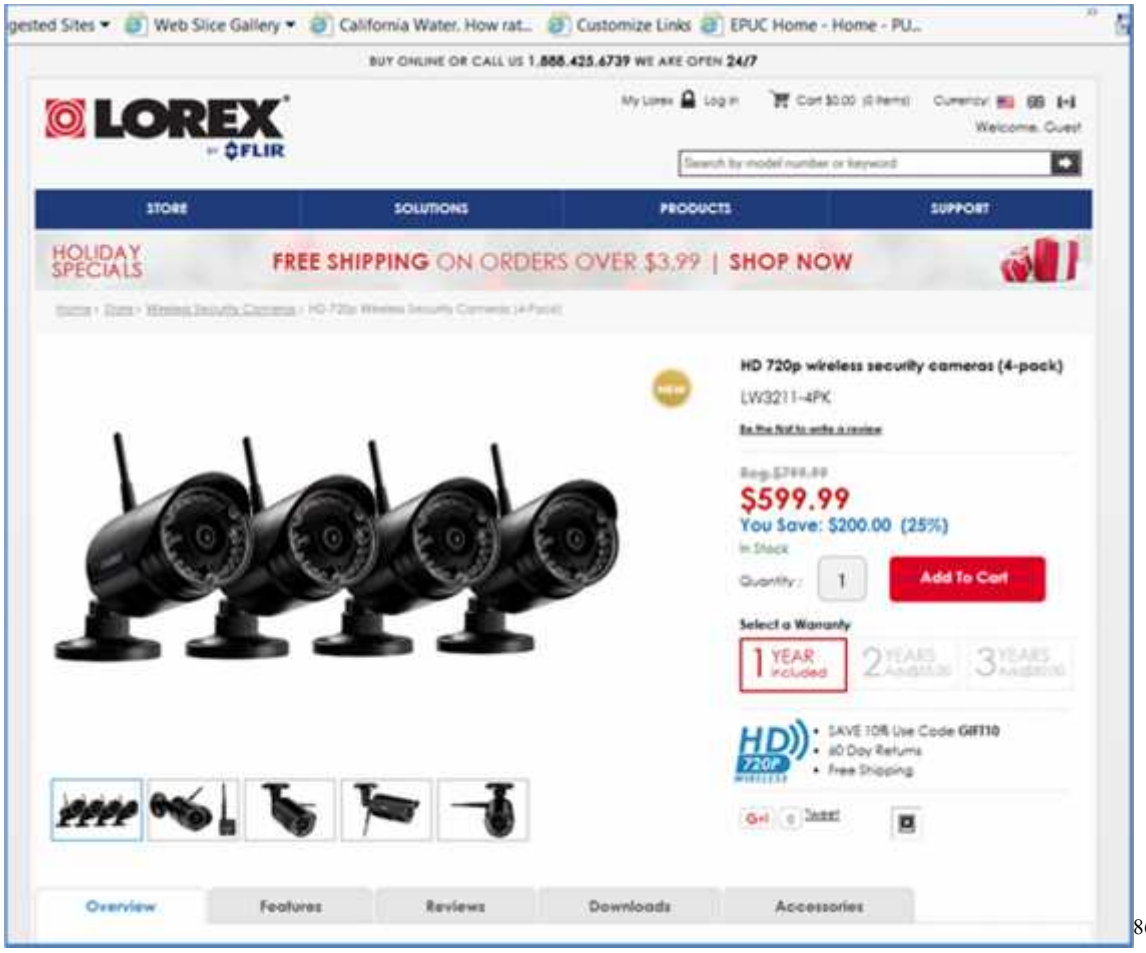
[83] Ibid, page BK PJ-413, lines 16-18.

[84] Ibid, page BK PJ-414.

installed by a local third party. CWS failed to consider other less costly options such as subscribing to a security surveillance and alarm system service such as ADT or AT&T or purchasing less costly wired or wireless security cameras available on the market. As shown below, Lorex Technology (see **Figures 2-C and 2-D**) offers a pack of four high density wireless cameras for outdoor installations at $600 and a pack of 14 high density wired/wireless cameras for $1,200. Therefore, ORA recommends the Commission authorize the installation of security cameras at the NEWTP of $1,800 plus loadings with a total cost of $2,982 (after loading).[85]

[85] ORA estimated the cost to include other loading cost (Construction Over Head and Escalation amount), as follows: (1,800/74,765) x $123,852=$2,982.

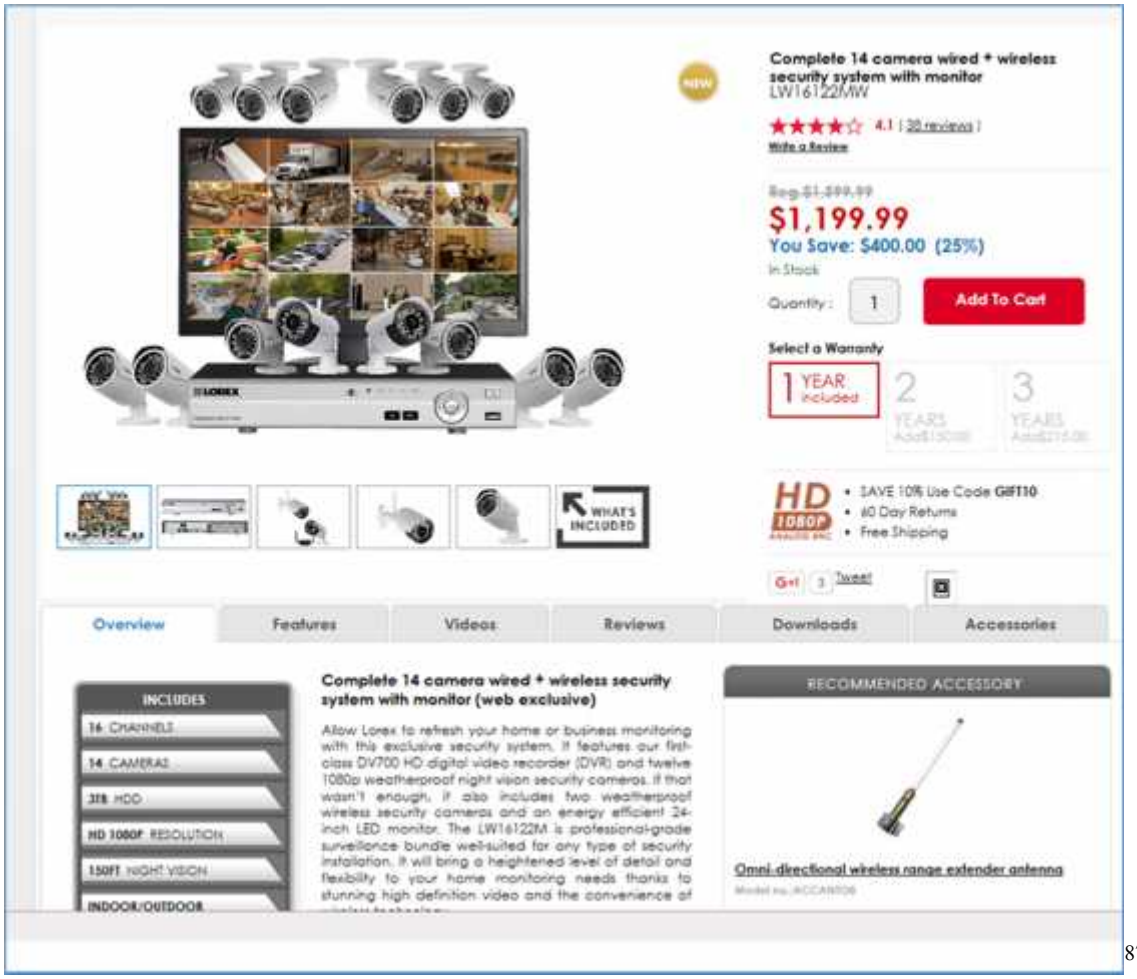
Figure 2-C: Wired and Wireless Security Cameras



[86]

[86] December 7, 2015 Picture was taken from website: https://www.lorextechnology.com.

Figure 2-D: Security Cameras



[87]

[87] December 7, 2015 Picture was taken from website: https://www.lorextechnology.com/complete-surveillance-system/Complete-14-camera-wireless-security-system-with-monitor/1799.p This system includes high density, wired and wireless cameras and digital video recorder. There are also option with night vision.

q. Replace Chemical Feed Pumps in Northwest and Northeast WTP (PIDs 99270 and 99154) for $790,078 in 2017 and 2018

CWS proposes to replace its chemical feed pumps at the Northwest (NW) and Northeast (NE) treatment plants for $288,354 in 2017 and $501,724 in 2018 respectively (PIDs 99154 and 99270), with a total budget of $790,078.[88] CWS claims that the 14-years-old NE and the 9-years-old NW chemical feed pumps are outdated, expensive to maintain, and extremely complicated to operate.[89] CWS intends to replace the pumps with more reliable and easier to maintain systems that have local support. In addition, less complex systems can be maintained by more variety of CWS's staff. [90]

CWS provided the 2010 to 2014 maintenance expenditures for chemical feed pumps in the treatment plants. Contrary to CWS's claim, ORA found that the average maintenance cost for the current chemical pumps is $2,951 per year.[91] ORA's calculation of the revenue requirement for the two projects is approximately $158,020.[92] Based on comparing these costs, ORA found that it is cheaper for CWS to continue to have chemical pump service with the current support. Replacing the current chemical feed pumps with local support will increase the annual expenses cost by over $155,000 or

[88] CWS Project Justification Report, page BK PJ-425 (NW WTP chemical pump), and BK PJ-444(NE WTP chemical pump).

[89] Ibid, page BK PJ-424 line 16 (NW WTP chemical pump), and BK PJ-443, lines 17 (NE WTP chemical pump).

[90]Ibid, page BK PJ-424 lines 16-20 (NW WTP chemical pump), and BK PJ-443, lines 17-21 (NE WTP chemical pump).

[91] CWS Response to ORA Data Request A1507015 SN2-018, Q.2a. The 4 years average was $11,803/4 = $2,951.

[92] Revenue Requirement = 20% x $790,100=$158,020.

nearly 54[93] times higher than the current maintenance costs. These projects are not cost effective. For this reason, ORA recommends the Commission deny this project.

r. Replace Compressed Air Systems in the Northeast and Northwest WTP (PIDs 99125 and 99265) for $317,508 in 2016

CWS proposes to replace the compressed air system for its microfiltration process at the Northeast and Northwest treatment plants for $160,870 and $156,638 respectively, with a total budget of $317,508 in 2016.[94] CWS claims that without replacing the compressors, the existing systems require high maintenance.[95] According to CWS, the systems with new compressors will increase reliability and lower maintenance costs.[96]

CWS provided the 2009 - 2014 maintenance expenditures for the compressors at the two treatment plants. Contrary to CWS's claim, ORA found that the five-year average maintenance cost for the compressors is $18,929 per year.[97] ORA's calculation of the revenue requirement for the two projects is approximately $63,501,[98] which is 3.4 times[99] more than the five-year average maintenance cost.

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[93] 158,020/2,951=53.5.

[94] CWS Project Justification Report, page BK PJ-384 (NE WTP compressor) and BK PJ-407 (NW WTP compressor).

[95] Ibid, page BK PJ-383 lines 21-23 (NE WTP compressor), and BK PJ-406, lines 21-23 (NW WTP compressor).

[96] Ibid, page BK PJ-383 lines 31-32 (NE WTP compressor), and BK PJ-406, lines 30-31 (NW WTP compressor).

[97] CWS Response to ORA Data Request A1507015 SN2-018, Q.3.a. CWS did not provide separate expenses for the compressors and capacitors, therefore the actual average compressors maintenance expenses was lower than $18,929 per year. 2009 to 2014 average maintenance expenses: Grand Total of $113,575 / 6 years = $18,929/year.

[98] Revenue Requirement = 20% x $317,508 = $63,501

In its response to ORA's data request, CWS did not present any quantified cost saving to support the project's cost effectiveness.[100] CWS has not adequately demonstrated the project's need and cost effectiveness, and it is CWS's burden of proof to do so. For this reason, ORA recommends the Commission deny this project.

s. Install a 10-inch PRV at Turnout KCWS (PID 98977) for $282,510 in 2017

CWS proposes to install a 10-inch pressure reducing valve (PRV) and connect the Kern County Water Agency (KCWA) turnout to an existing pipeline for a total budget of $282,510 in 2017.[101] CWS claims that without the PRV customers will experience pressure fluctuations.[102] In its response to ORA's DR SN2-018, CWS refers to General Order 103A (GO 103A) Section VII, regarding the acceptable variation in pressure as the following:

> *6. Pressures -A. Variations in Pressure*
> *Each potable water distribution system shall be operated in a manner to assure that the minimum operating pressure at each service connection throughout the distribution system is not less than 40 psi nor more than 125 psi, except that during periods near PHD the pressure may not be less than 30 psi and that during periods of hourly minimum demand the pressure may be not more than 150 psi. Subject to the minimum pressure requirements of 40 psi, variations in pressures under normal operation shall not exceed 50% of the average operating pressure.*
> *The average operating pressure shall be determined by computing the arithmetical average of at least 24 consecutive hourly pressure readings.*

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[99] 63,501/18,929=3.35

[100] CWS Response to ORA Data Request A1507015 SN2-018, Q.3.b.

[101] CWS Project Justification Report, page BK PJ- 515. Lines 12-13 and BK PJ-516.

[102] Ibid, page BK PJ-515. Line 36.

As stated in GO 103A, ORA summarized that the pressure fluctuation in the distribution system should be no less than 40 psi and no more than 125 psi. In its response, CWS also includes maps, annual pressure survey monitoring locations, and pressure readings as representative samples from stations in North Garden area. The 2010 - 2015 pressure readings near project location [103] indicated that the water pressure at the various stations were fluctuating between 52.3 psi and 92.1 psi.[104] The range of these pressure fluctuations is within range of the GO 103A pressure requirement of 40 psi to 125 psi stated above. Based on the information provided by CWS, ORA asserts that the pressures nearby the project's area fluctuated within the acceptable pressure fluctuation levels. Hence, there is no need for this PRV project. For this reason, ORA recommends the Commission deny this project.

t. Install a 10-inch PRV and Flow Valve near Meany Ave and Patton Lane (PIDs 98967 and 99018) for $350,933 and $38,963 in 2018

CWS proposes to install a 10-inch pressure reducing valve (PRV), 8-inch flow meter, and 12-inch Ductile Iron pipe to the existing pipeline at Meany Avenue and Alken Street for a budget of $350,933 in 2018.[105] CWS also proposes to install a 10-inch PRV on Patton Lane for a budget of $38,963 in 2018.[106] CWS claims that without the PRVs customers will experience pressure fluctuations in the area.[107]

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[103] CWS Response to ORA Data Request A1507015 SN2-018, Q.5. a: Map Attachment SN2-018 Q5(a).pdf showed pressure survey monitoring location SP 62 near by the proposed project.

[104] Ibid, Q.5. a: 2010 to 2015 pressures at pressure points as shown at file: Attachment SN2-018 Q5(b).-BK APS Pt 62 2010 to 2015.pdf indicated pressure readings ranges between 52.3 and 92.1 psi.

[105] CWS Project Justification Report, page BK PJ-519. Lines 12-13 and BK PJ-520.

[106] CWS's workpapers Bakersfield Discovery 2015, Tab: WP8B5a PID.

[107] CWSs Project Justification Report, page BK PJ-519. Line 33.

Similar to the project 98977 above, CWS provided the 2010 - 2015 pressure survey information near the project locations.[108] The pressure readings at various locations indicate that the pressure is fluctuating between 56.6 psi to 102.4 psi.[109] These pressure fluctuations are within the range of the GO-103A pressure requirement of 40 psi to 125 psi. Based on the information provided by CWS, ORA found the system operates within the acceptable pressure fluctuation levels; hence, the PRV and Valve projects are unnecessary. For this reason, ORA recommends the Commission deny these projects.

u. Replace Online Instrumentation (Turbidimeters) at the Northeast WTP and Northeast (99135 and 99269) for $289,443 in 2016 and 2017 respectively.

CWS proposes to replace turbidimeters[110] at the Northeast and Northwest treatment plants for $192,200 in 2016 (PID 99135) and for $97,243 in 2017 (PID 99269), with a total budget of $289,443.[111] According to CWS, the turbidimeters are necessary to determine the clarity of the water. Currently these meters are outdated and require new firmware and replacement parts which are no longer available and are not supported by

[108] CWS Response to ORA Data Request A1507015 SN2-018, Q.5. a: Map Attachment SN2-018 Q5(a).pdf showed pressure survey monitoring locations: SP 38 near by the 2 proposed projects PIDs 99018 and 98967

[109] Ibid, Q.5. a: 2010 to 2015 pressures at pressure points as shown at file: Attachment SN2-018 Q5(b).-BK APS Pt 38 2010 to 2015.pdf indicated pressure readings ranges between 56.6and 102.4 psi.

[110] In the NE WTP, 14 turbidimeters were installed in 2003. In the NW WTP, CWS did not identify how many needs to be replaced and when the turbidimeters were installed.

[111] CWS Project Justification Report, page BK PJ-384 (NE WTP compressor), and BK PJ-407(NW WTP compressor).

manufacturer. CWS asserts that the new turbidimeters will ensure that the treatment plant continues to produce high quality water.[112]

In its Project Justification Report, CWS did not provide any evidence to support its claims of the outdated meters, firmware and parts that are no longer available. In its DR SN2-018 response, CWS presented the 2009 to 2014 average turbidimeters maintenance cost of $11,996 per year [113] for both treatment plants from HACH Company. The maintenance records showed that the turbidimeter's manufacture, HACH Company, still provides supports to maintain the turbidimeters as of 2014. CWS explained that current meters need to be replaced by the next generation of HACH turbidimeters. It is unclear why CWS did not provide evidence such as notification from HACH Company that HACH no longer supports the previous version of turbidimeters.

Based on the information in the Project Justification Report and CWS's response to ORA's data request, ORA cannot verify that the turbidimeters are outdated, no longer have available replacement parts or no longer have manufacture support. For this reason, ORA recommends the Commission deny the projects.

v. Control Valve Replacements

CWS requests $117,065, $29,998, and $122,991(PIDs 98526, 98532, and 98528) for the annual control valve replacement in 2016-2018. Refer to ORA's Report on Plant -

[112] CWS Project Justification Report, page BK PJ-383 lines 21-23 (NE WTP compressor), and BK PJ-406, lines 21-23 (NW WTP compressor).

[113] CWS Response to ORA Data Request A1507015 SN2-018, Q.4.a. See attachment SN2-018 Response #2, tab "Q4a". 2009 to 2014 average maintenance expenses: Grand Total of $71,974/6 years = $11,996/year.

Common Issues regarding its methodology and recommendation for the annual Control Valve Replacement project budget.

w. Control Valve Overhaul

CWS requests $74,542, $76,405, and $78,316 (PIDs 98619, 98626, and 98628) in 2016, 2017 and 2018 respectively, for the annual replacement of the tubing and internal parts of the valves, and clean and reuse the body of the valve. Refer to ORA's Report on Plant - Common Issues regarding ORA's methodology and recommendation for the annual Control Valve Overhaul project budget.

x. Vehicle Replacements

CWS proposes 35 vehicle replacements in the Bakersfield district in 2016, 2017 and 2018 for a total budget of $2,094,348. For the reasons presented in ORA's Report on Plant – Common Issues, ORA recommends the following adjustments to CWS's vehicle replacement requests.

Table 2-Q: Vehicle Replacements – Bakersfield

Project ID	Vehicle ID	Year/Make/Model	CW's Proposed Replacement Year	ORA's Recommended Replacement Year	CWS Proposal	ORA Recommendation
99110	V200039	2000 FORD F-450	2016	2018	$ 77,578	$ 77,578
99110	V204021	2004 DODGE RAM 1500	2016	2016	$ 41,521	$ 41,521
99110	V204043	2004 FORD F-350 C&C DIESEL	2016	2017	$ 71,022	$ 71,022
99110	V204054	2004 CHEVROLET CT6500 DIESEL	2016	2019	$ 169,361	$ 169,361
99110	V204074	2004 DODGE RAM 1500	2016	2016	$ 41,521	$ 41,521
99110	V204076	2004 FORD F-350 DIESEL	2016	2017	$ 71,022	$ 71,022
99110	V206034	2006 CHEVEROLET 2500 SILVERADO SB	2016	2016	$ 46,984	$ 46,984
99110	V206035	2006 CHEVROLET 3500 SILVERADO	2016	2019	$ 71,022	$ 71,022
99110	V207008	2007 CHEVROLET SILVERADO 1500	2016	2016	$ 41,521	$ 41,521
99110	V207021	2007 TOYOTA CAMRY - HYBRID	2016	2016	$ 38,243	$ 38,243
99110	V207113	2007 CHEVROLET SILVERADO 1500	2016	2016	$ 41,521	$ 41,521
99110	V208011	2008 FORD F-250	2016	2016	$ 46,984	$ 46,984
99110	V208062	2008 CHEVROLET 1500 SILVERADO	2016	2017	$ 41,521	$ 41,521
99110	V208104	2008 DODGE DAKOTA	2016	2016	$ 41,521	$ 41,521
99110	V212002	2012 FORD F-150	2016	next GRC	$ 41,521	$ -
99110	V213002	2013 FORD F-150	2016	next GRC	$ 41,521	$ -
99407	V204044	2004 Chevrolet CT-6500	2016	next GRC	$ 169,361	$ -
99111	V205006	2005 FORD F150 XL STYLESIDE	2017	2017	$ 42,559	$ 42,559
99111	V207014	2007 CHEVROLET SILVERADO 1500	2017	2017	$ 42,559	$ 42,559
99111	V207017	2007 TOYOTA TUNDRA	2017	2016	$ 42,559	$ 42,559
99111	V208009	2008 CHEVROLET SILVERADO 2500	2017	2019	$ 42,559	$ 42,559
99111	V208012	2008 FORD F-250	2017	2019	$ 48,159	$ 48,159
99111	V208063	2008 CHEVROLET SILVERADO 2500	2017	next GRC	$ 42,559	$ -
99111	V208169	2008 FORD F-350	2017	next GRC	$ 128,796	$ -
99111	V209006	2009 FORD F-250	2017	2018	$ 48,159	$ 48,159
99111	V210005	2010 FORD F-250	2017	2018	$ 48,159	$ 48,159
99111	V212001	2012 FORD F-150	2017	next GRC	$ 42,559	$ -
99111	V213001	2013 FORD F-250	2017	2019	$ 42,559	$ 42,559
99111	V214054	2014 GMC SIERRA 1500 4X4 SLE	2017	2017	$ 42,559	$ 42,559
99112	V206011	2006 FORD F-350	2018	next GRC	$ 74,618	$ -
99112	V206037	2006 DODGE 1500 RAM	2018	2017	$ 43,623	$ 43,623
99112	V207019	2007 TOYOTA TUNDRA	2018	2019	$ 43,623	$ 43,623
99112	V208103	2008 CHEVROLET SILVERADO 1500	2018	2018	$ 43,623	$ 43,623
99112	V208168	2008 FORD F-350	2018	next GRC	$ 132,016	$ -
99112	V213010	2013 FORD F-250	2018	next GRC	$ 49,363	$ -
					$ 2,094,356	$ 1,372,037

y. Tank Painting Project at 7 Stations for $1,652,738 in 2016, 2017 and 2018

CWS proposes seven tank-painting projects at stations: 45, 73, 87, 96, 116, 176, and 118 for a total budget of $1,652,738 in 2017 and 2018.[114] These projects include interior and exterior tank painting maintenance that is routinely performed by CWS. **Table 2-R** summarizes the tank painting projects.

Table 2-R: Tank Painting Projects - Bakersfield district[115]

Bakersfield District				
Year	Project ID	Project Description	CWS's Proposed Budget	ORA's Recommendation Budget
2016	97681	Complete Interior Coating for a 0.26 MG Welded Steel Tank at BK 073-T5	$ 139,670	$ 118,720
2016	97867	Complete Interior Coating for a 0.341 MG Welded Steel Tank at BK 188-T1	$ 165,376	$ 140,570
2016	98208	Complete Exterior Coating for BK 116-T1, T2, T3, T4	$ 232,058	$ 232,058
2017	97912	Partial Interior Coating for a 0.5 MG Welded Steel Tank at BK 045-T1	$ 160,847	$ 160,847
2017	97913	BK 96 T2, T3, T4 T5 Exterior Coating & T3 Interior Complete	$ 658,464	$ 658,464
2017	97914	Partial Exterior Coating for a 1.052 MG Welded Steel Tank at BK 087-T6	$ 78,123	$ 78,123
2018	97917	Partial Exterior Coating for a 5.144 MG Welded Steel Tank at BK 176-T2	$ 218,200	$ 218,200
Total			$ 1,652,738	$ 1,606,981

[114] Email from Kitty Wong of CWS, to Susana Nasserie of ORA (October 14, 2015, 5:07 PM) (on file with author). CWS provided Capital Project Justification Report, page 1 to 6, Project Description: Various Coating Replacements for Exiting Tank Infrastructure. See also Project Cost of The High Performance Coating Project Estimate for 7 PIDs: 97681, 87867, 98208 in 2016, 97912, 97913, 97914 in 2017, and 97917 in 2018 (no pages were identified). The budgets in these project justifications have different numbers as they were presented in its Work papers (Bakersfield Discovery 2015.xlxs see Tab: WP10D2). ORA relies on the amount contain in the Workpapers to eliminate the need to revise the budgets that ORA agrees with.

ORA also evaluated the needs for each project based upon the provided tank inspection reports.[116] While ORA does not contest the need for the tank painting projects, ORA disagrees with CWS's calculations of the tank areas that need to be painted in stations 73 and 188 as discussed below:

PID 97681 (Station 73): The inspection report recommended coating the entire tank interior. Based on the dimension of the tanks, the estimated area of the entire tank interior is 6,009 sq. ft.[117] However, CWS project justification includes 7,065 sq. ft. of tank interior area, which is larger than the actual tank space. CWS did not present any information on how it determine the area to be 7,065 sq. ft. ORA recommends the Commission adopt an adjusted tank painting budget of $118,000.[118]

PID 97867 (Station 188): The inspection report recommended coating the entire tank interior. Similar to the tank in Station 73, ORA's calculation found that the area of the entire tank interior is 7,184 sq. ft. However, CWS's project justification includes 8,424 sq. ft. of tank interior area, without providing calculation on how CWS derived the number. ORA recommends the Commission adopt ORA's budget adjustment of $140,570.[119]

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[116] CWS Response to ORA Data Request A1507015 DG-023. CWS provided the tank inspection reports for Bakersfield district.

[117] See **Appendix B** for ORA's estimate for the stations 73 and 188 interior tank areas.

[118] 6,009/7,065 = 0.85= 85%, ORA's recommendation budget of tank 73-T5 is 85% of the budget of in the workpapers Tab WP10D2 = 85% x $139,670 = $118,720.

[119] 7,184/8,424 = 0.85= 85%, ORA's recommendation budget of tank 188-T1 is 85% of the budget of in the workpapers Tab WP10D2 = 85% x $165,376 = $140,570.

2. Non-Specific Budgets for 2016 to 2018

CWS requests $11,846,900 in the Non-Specific Budget to address unforeseen, unplanned, and emergency projects and regulatory compliant projects. ORA's Report on Plant - Common Issues presents its recommended total disallowance of budget.

3. 2015 Capital Budget

CWS requests approximately $14,457,514 for plant additions in 2015, which consist of projects authorized for 2015 in the last GRC and projects authorized from previous GRCs. ORA's Report on Plant - Common Issues presents its analysis and basis for adjusting the 2015 capital additions for Bakersfield.

D. CONCLUSION

ORA's recommendations presented above have been incorporated in the calculations for estimated Plant in Service as shown in Table 7-1 in its Company-wide Report, Appendix RO.

Chapter 3: Plant – Kern River Valley District

A. INTRODUCTION

This chapter presents ORA's analyses and recommendations for Plant in Service for CWS's Kern River Valley District.

B. SUMMARY OF RECOMMENDATIONS

Based on ORA's review and analysis of CWS's requested plant additions, ORA recommends disallowance, adjustment, deferral or Advice Letter treatment where appropriate. These recommendations form the basis of ORA's recommended capital budget summary presented in **Table 3-A** below. ORA's estimate plant additions also reflect recommendations in its testimony on Common Plant Issues regarding Pipeline Replacement Program, Meter Replacement Program, Seismic Retrofits, and Vehicle Replacements. **Table 3-B** presents ORA project-specific adjustments.

Table 3-A: Capital Budget Summary – Kern River Valley District

Kern River Valley ($000)	2015	2016	2017	2018	Annual Average
ORA	$ 786.6	$ 388.2	$ 175.6	$ 244.3	$ 398.7
CWS	$ 3,018.3	$ 980.2	$ 937.1	$ 967.3	$ 1,475.7
CWS > ORA	$ 2,231.7	$ 592.0	$ 761.5	$ 723.1	$ 1,077.1
ORA as % of CWS	26%	40%	19%	25%	27%

Table 3-B: Capital Budget Details – Kern River Valley District

2015	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00051988	Paint Interior Complete and Replace CP Anodes - Bodfish Sta. 11 Tank 1	$ 9,180	$ 9,180	$ -	100%
	00061373	Mtn View - 1,500' 6" PVC; Reconnect 25 1" Services	$ 205,990	$ 165,794	$ (40,195)	124%
	00064477	100K Tank - Sta. 143 - 02 South Lake	$ -	$ 385,070	$ 385,070	0%
	00066177	Pretreatment - Lower Bodfish Plant	$ -	$ 192,458	$ 192,458	0%
	00071197	Point to Point Radio Controls - Squirrel Mt., Lake Properties, and Southlake	$ -	$ 20,268	$ 20,268	0%
	00075913	Install standby generator and automatic transfer switch at station 1.	$ -	$ 154,452	$ 154,452	0%
	00076345	Install manual transfer switch, generator receptacle, and alarm dialer for the Upper Bodfish treatment plant.	$ -	$ 21,600	$ 21,600	0%
	00076346	Install manual transfer switch, generator receptacle, and alarm dialer for the Lower Bodfish treatment plant.	$ -	$ 21,600	$ 21,600	0%
	KRV0900	Meter Replacement Program	$ -	$ 9,628	$ 9,628	0%
Specifics Total			**$ 215,170**	**$ 980,052**	**$ 764,882**	**22%**
Non-Specifics Total			**$ 183,119**	**$ 154,400**	**$ (28,719)**	**119%**
Carry-Overs Total			**$ 388,286**	**$ 1,883,864**	**$ 1,495,578**	**21%**
TOTAL 2015			**$ 786,575**	**$ 3,018,316**	**$ 2,231,741**	**26%**

2016	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00097934	Project to improve rafter ends, install new interior ladder and install two 8" earthquake expansion joints on piping. Sta. 011 T1	$ 47,543	$ 57,980	$ 10,436	82%
	00099217	The 2016 main replacement program will replace 2,560 feet of pipelines in the Kern River Valley district at an estimated cost of $121 per foot.	$ 145,094	$ 461,802	$ 316,708	31%
	KRV0900	Meter Replacement Program	$ 3,652	$ 11,187	$ 7,535	33%
	00099141	Vehicle Replacements > 120,000 miles	$ 41,521	$ 112,543	$ 71,022	37%
Specifics Total			**$ 237,810**	**$ 643,511**	**$ 405,701**	**37%**
Non-Specifics Total			**$ -**	**$ 186,300**	**$ 186,300**	**0%**
Carry-Overs Total			**$ 150,383**	**$ 150,383**	**$ -**	**100%**
TOTAL 2016			**$ 388,193**	**$ 980,194**	**$ 592,001**	**40%**

2017	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	97630	This project will fund a feasibility study for a proposed surface water intake and booster station along the Kern River to supply the existing Kernville surface water treatment plant. The study will address feasibility, agency acceptance, permitting requirements, and will assess alternatives and costs.	$ -	$ 154,717	$ 154,717	0%
	97935	Project to improve rafters and install a 24" cupola vent. Sta. 006-T1	$ 23,314	$ 23,314	$ -	100%
	97945	Install airgap on overflow and two 10" flexible earthquake expansion joints on the tank piping.	$ -	$ 32,010	$ 32,010	0%
	99218	The 2017 main replacement program will replace 2,560 feet of pipelines in the Kern River Valley district at an estimated cost of $121 per foot.	$ 148,518	$ 473,347	$ 324,829	31%
	KRV0900	Meter Replacement Program	$ 3,738	$ 11,467	$ 7,729	33%
	99142	Vehicle Replacements > 120,000 miles	$ -	$ 51,518	$ 51,518	0%
Specifics Total			**$ 175,570**	**$ 746,374**	**$ 570,804**	**24%**
Non-Specifics Total			**$ -**	**$ 190,700**	**$ 190,700**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2017			**$ 175,570**	**$ 937,074**	**$ 761,504**	**19%**

2018	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00098263	Installation of new 24" diam. cupola vent. Sta. 007-T1	$ 9,593	$ 9,593	$ -	100%
	00099327	Install a backbone communications system to collect data and allow for remote monitoring of the critical facilities in Kern River Valley including 5 treatment plants located all around the lake and additional facilities that are remote where travel time can be reduced significantly by having remote monitoring capabilities.	$ -	$ 191,085	$ 191,085	0%
	99219	The 2018 main replacement program will replace 2,560 feet of pipelines in the Kern River Valley district at an estimated cost of $121 per foot.	$ 151,904	$ 485,180	$ 333,276	31%
	KRV0900	Meter Replacement Program	$ 3,823	$ 11,753	$ 7,930	33%
	00099144	Vehicle Replacements > 120,000 miles	$ 71,022	$ 74,618	$ 3,595	95%
Specifics Total			**$ 244,272**	**$ 772,229**	**$ 527,957**	**32%**
Non-Specifics Total			**$ -**	**$ 195,100**	**$ 195,100**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2018			**$ 244,272**	**$ 967,329**	**$ 723,057**	**25%**

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C. DISCUSSION

The Kern River Valley District recorded $1,000,800 in annual average gross plant additions for the most recent six-year period 2009-2014.[120] Table 3-C compares CWS's and ORA's estimates against recorded annual average gross plant additions.

Table 3-C: Capital Budget Proposals vs. Recorded Expenditures– Kern River Valley District

Kern River Valley ($000)	2015	2016	2017	2018	Annual Average	% of Recorded
2009-2014 Recorded	--	--	--	--	$ 1,000.8	100%
ORA	$ 786.6	$ 388.2	$ 175.6	$ 244.3	$ 398.7	40%
CWS	$ 3,018.3	$ 980.2	$ 937.1	$ 967.3	$ 1,475.7	147%

ORA presents a discussion on its analyses and recommended adjustments to CWS's requested capital budget for specific projects (Section 1), 2016-2018 Non-Specific budgets (Section 2), and 2015 Budget (Section 3) below.

1. Specific Projects

In this GRC, CWS proposes $2,884,594 for specific projects [121] which also include Pipeline Replacement Program, Small and Large Meter Replacement Program, Install SCADA Backbone System, Perform a Feasibility Study, and Vehicle Replacement Program. The following are ORA's recommended disallowance or adjustments:

[120] Gross plant additions include company funded plant additions as well as contributions and advance deposits for specific plant.

[121] See Table 2-B: in 2016 CWS requests for $980,194, in 2017 for $937,074 and in 2018 for $967,329, with a combined total 2016 to 2018 budget of $2,884,594.

a. Pipeline Replacement Program

CWS requests approximately $1,420,329 to replace 7,680 feet of pipeline between 2016 and 2018. ORA evaluated the leak rate, water loss, system age, results of AWWA's recommended pipeline replacement model, historical replacement rate, and replacement cost for each district and provided a detailed evaluation of CWS's pipeline replacement proposal in ORA's Common Plant Issues Testimony (see ORA's Report on Plant – Common Issues). Table 3-D below shows ORA's recommendations for a reasonable amount of pipeline replacement and the associated budgets in this district.

Table 3-D: Pipeline Replacement Program Budget – Kern River Valley District

YEAR	Project ID (PID)	ORA's Recommendation		CWS's Proposal	
		Length (ft)	Budget	Length (ft)	Budget
2016	00099217	1,166	$ 145,094	2,560	$ 461,802
2017	00099218	1,166	$ 148,518	2,560	$ 473,347
2018	00099219	1,166	$ 151,904	2,560	$ 485,180
	Total	3,497	$ 445,516	7,680	$ 1,420,329

b. Specific Small and Large Meter Replacement Program (KRV09000)

Table 3-E below lists CWS's requests and ORA's recommendation on the small and large meter replacement budgets for the Kern River Valley district. ORA recommended budgets are based on detailed analysis and recommendation in its Report on Plant-Common Issues.

Table 3-E: Meter Replacement Program Budget

District:	Kern River Valley		
YEAR	PID	ORA's Recommendation	CWS's Proposal
2016	0900	$ 3,652	$ 11,187
2017	0900	$ 3,738	$ 11,467
2018	0900	$ 3,823	$ 11,753

c. Install SCADA Backbone System (PID 99327)- $191,085 in 2018

CWS proposes to install a SCADA backbone radio communication system for $191,085 in 2018 to connect the Kern River office to remote facilities.[122] CWS claims that the radio system will provide a more reliable communication system between the Lakeland office and remote facilities within the district.[123] The proposed project includes installations of a master radio and 10 subscriber modules at the Lakeland office and nine sites.[124]

In the Kern River Valley district, CWS supplies water to approximately 5,200 customers through eight systems (Kernville, Split Mountain, Countrywood, Lower Bodfish, Upper Bodfish, Lakeland, Southlake and Onyx) surrounding Lake Isabella.[125] Each system includes pump stations, treatment plants, and storage tanks. According to CWS, many of the systems can be operated through local controls or have remote control capability through radio frequency or leased line communications.[126] However, the district does not have full visibility into all systems without travelling to each facility.[127]

CWS asserts that the proposed radio communication system will allow CWS to monitor its remote facilities and the ability to make operational changes without requiring travel

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[122] CWSs Project Justification Report, page KRV PJ – 208, Lines 12-13.

[123] Ibid, page KRV PJ – 208, Lines 12-13.

[124] Ibid, page KRV PJ – 208, Lines 21-35. The nine facilities are Lakeland treatment plant, Lower Bodfish treatment plant, Upper Bodfish treatment plant, Southlake booster station, Arden treatment plant, Onyx well site, Kernville treatment plant, Nellie Dent tank, and Ponderosa Pines pump station.

[125] Ibid, page KRV PJ – 4, A. District Overview.

[126] Ibid, page KRV PJ – 208, Lines 13-17.

[127] Ibid, page KRV PJ – 208, Lines 17-18.

to each station.[128] CWS also claims that employees will be able to respond to urgent matters more promptly saving customers from potential outages,[129] and primary benefits of reduced outages and lower expenses for its customers.[130]

ORA disagrees with this project. As stated above, CWS currently already has a system to operate remote facilities in its district. CWS provided minimum evidence to justify how the radio system would decrease operating costs by reducing the response time and the number of outages. In addition, ORA's analysis found that installing the radio communication will increase expenses. ORA's points are discussed below:

i. CWS provided minimum justification to support the need of the radio communication

CWS claims that the goal of the project (to install the radio communication) is to improve response time to potential outages.[131] However, in its Project Justification Report,[132] CWS provides no information of which type of outage response time in the district requires improvement. Also there is no analysis of the average, current, and improved response time before and after the radio communication installations. ORA requested information concerning the time and cause/type of water outages that occurred in the last five years. CWS responded by providing outage-call logs of after work hours (between 4

[128] CWS Project Justification Report, page KRV PJ – 208, Lines 13-17.

[129] Ibid, page KRV PJ – 208 to 209, Lines 38-42.

[130] Ibid, page KRV PJ – 210, Lines 93-98.

[131] Ibid, page KRV PJ – 209, Lines 45-46.

[132] Ibid, page KRV PJ – 208 to 211.

pm to 8 am) from 2009 to 2015, but no logs during work day hours were provided.[133] The logs listed the outage calls, such as leak investigation, main leak, service leak, hydrant leak, tank, reservoir, treatment plant for all facilities in the Kern River Valley operating areas.[134] ORA analysis found that the current response time of those outages was between 10 to 60 minutes, but there was no information of response time during the working hours even though it was also requested by ORA. ORA found that CWS's justification on how the radio installation would improve response time was minimal and insufficient. Also, ORA is concerned that CWS did not provide the information requested. Keeping these types of records is important, and it is problematic that the company did not provide the information. It raises other issues in regards to how CWS operates and maintains its system.

Similarly, CWS is also unclear on how the radio communication would reduce outages. Specifically leaks, taste/odor, and dirty water cannot be corrected remotely and still require CWS personnel's physical presence. From 2012 to 2014 there were water quality complaints such as air, dirty water, pressures and taste/odor complaints as shown on **Table 3-F** below.

[133] CWS Response to ORA Data Request SN2-007, Q. A.1. ORA received incomplete data and no working day data is available for ORA to evaluate. CWS did not explain why the working day logs were not included in this response. Based on the available after work hour's data, ORA's analysis finds that CWS handled an average of 9 calls of issues per month. In addition, the data also shows CWS' respond time for each call-out incident was between 10 to 60 minutes.

[134] CWS Response to ORA Data Request SN2-007, Q. A.1, see Attachment SN2-007 Q A1.pdf

Table 3-F: Water Quality Complaints in Kern River District[135]

	2012	2013	2014	3 Yr Total
AIR	0	1	1	2
DIRTY	6	5	2	13
NOISE	0	0	0	0
PRESSURE	1	7	2	10
SAND	0	0	0	0
TAST/ODR	2	2	2	6
Yearly Totals	**9**	**15**	**7**	

It is unclear, what kind of and how many complaints, outages, and failures the radio communication can improve. CWS provided no analysis on how the radio communication would reduce these outages.

After evaluating its project justification, reviewing the available data and the response to ORA's data request,[136] ORA discovered that CWS has not adequately demonstrated the project's need. It is the burden of a requesting utility to do so. Without an adequate project need analysis, ORA cannot verify the validity of this project.

ii. Radio Communication installation will increase expenses

CWS claims that the project benefits customers because it will reduce expenses. CWS explained that without the radio communication, CWS cannot perform a task remotely. Instead, CWS has to send a technician from San Jose to travel to Kern River Valley to perform the task. In its response to ORA data requests, CWS provided a spreadsheet that showed recorded expenses with a total cost of $30,374 for the work done by a technician

[135] CWS Response to Minimum Data Request (MDR) – Item H1 WQ Complaints for Kern River Valley district.

[136] CWS Response to ORA Data Request SN2-007 and CWS Response to Minimum Data Request (MDR) – Item H1 WQ Complaints for Kern River Valley district.

from San Jose from 2012 to October 10, 2015. These expenses are equivalent to $30,374/ 3.75 years = $8,100 per year.[137]

However, in the Project Justification Report, CWS explains that a radio communication requires a lease expense of approximately $9,000 per year. The lease expense is in addition to the expense of the capital project, which is equivalent to $30,000 per year.[138] Therefore, the total expenses are $9,000 + $30,000 = $39,000 per year.

If CWS continues with its current operation without the radio communication installation, the ratepayers can avoid an unnecessary spending of $39,000 - $8,100 = $30,900 per year. For this reason, ORA found that it is not cost effective for CWS to proceed with the radio communication installation. Therefore, ORA recommends the Commission deny CWS's request for this project.

d. Surface Water Intake Alternatives/Feasibility Study (PID 97630) for $154,717 in 2016

CWS proposes to perform a Feasibility Study for a budget of $154,717 in 2016. CWS claims that the study will explore options for a surface water intake and a booster station located near the shore of the Kern River to supply water to the Kernville Surface Water Treatment Plant (SWTP).[139] The Kernville SWTP is a source of supply of the Kernville system with a design capacity of 1,000 gpm.[140] The Kernville system has approximately

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[137] CWS Response to ORA Data Request SN2-007, Q. A.2.a and Q.A.2.b.

[138] CWS Project Justification Report, page KRV PJ – 209, Lines 70-74.

[139] Ibid, page KRV PJ – 212, Lines 19-27.

[140] DDW's (formerly CDPH) sanitary survey report of the water supply system of California Water Service Company – Kernville, Water Supply No. 1510033 dated September 12, 2013. Page 2, Table: Approved sources of water supply, with Kern River SWTP Q=1,000 gpm. (Note: Q stands for capacity)

2,000 connections.[141] The system has a supply of 400 gpm from 11 wells and 1,000 gpm from the Kernville SWTP (total 1,400 gpm).[142]

According to CWS, a current water intake structure embedded in the bottom of the Kern River was providing up to 1,000 gpm[143] of water to the Kernville SWTP for treatment. Recent drought conditions, however, have lowered the water level in the river and reduced the amount of water that the intake can pump to the treatment plant. CWS claims that the current intake can provide 500 gpm, which is half of the intake's design capacity. In addition, CWS claims that the screen on the intake is often clogged with debris from the riverbed due to a lower water level of the river, which requires a rigorous flushing schedule in order to operate efficiently. To resolve the above issues, CWS installed a second intake to pump an additional 700 gpm of water from the Kern River,[144] which increases the current source of intake supply to 1,200 gpm. The two river intakes

[141] CWS response to ORA data request for SN2-003 the MDD for Kernville and Arden (see the 2005 to 2014 numbers of active customers range approximately 2,000 customers and DDW sanitary survey report of the water supply system of California Water Service Company – Kernville, Water Supply No. 1510033 dated September 12, 2013. Page 1, at the bottom page.

[142] DDW sanitary survey report of the water supply system of California Water Service Company – Kernville, Water Supply No. 1510033 dated September 12, 2013. Page 2, Table: Approved sources of water supply totaling of 1,400 gpm. The Kern River STWP has a capacity of 1000 gpm and the 11 wells have a total capacity of 400 gpm. Also see the paragraph under the table confirming the total capacity of 1,400 gpm.

[143] Noted that in Sept 12, 2013 DDW's sanitary survey report on page 3, it stated the intake pump capacity is 1,150 gpm instead of 1,000 gpm.

[144] In Sept 12, 2013 DDW sanitary survey report page 3: see Surface Water Intake. The report stated that "….But because of its location and buildup on the intake screens, the pump does not pump at its maximum capacity. A backup pump with capacity of 700 gpm was installed on the river shore to supplement the river intake. Raw water is transmitted, through an 8-inch pipeline, to Kernville Station 1 site".

at the Kernville SWTP and 11 wells can produce up to 1,400 gpm [145] to the Kernville system.

CWS claims that the reduced capacity at the intake structure and the need to install a second temporary intake pipe to make up for the lost capacity require it to look at additional alternatives for an intake design that would provide a more reliable source of supply for the Kernville SWTP. The Kernville system has enough supply to meet the demand as discussed below.

The Kernville SWTP produces enough water to meet customers' usage in the system. In a 2013 annual inspection report for the Kernville System, the State Water Resources Control Board's Department of Drinking Water Program (DDW) stated that the source capacity (1,400 gpm) exceeds the maximum day demand (MDD) of 361 gpm.[146] In its response to ORA's data requests, CWS provides the MDD data of the Kernville system. **Table 3-G** and **Figure 3-A** show the 2005 to 2015 MDD for the system.[147] The 2015 MDD is ORA's estimated data based on the governor's mandatory reduction. [148] This decreasing demand is consistent with CWS's conservation efforts and need to meet the SB 7x7 conservation goal for 2020.

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[145] ORA bases on STWP capacity of 1,000 gpm, even though the intakes have a total capacity of 1,200 gpm. (Riverbed intake and secondary intake capacity of 500 gpm + 700 gpm = 1,200 gpm).

[146] DDW sanitary survey report of the water supply system of California Water Service Company – Kernville, Water Supply No. 1510033 dated September 12, 2013. Page 2, Section 1. SOURCES (at the bottom page) listed that the source capacity for this system is 1,400 gpm with an MDD of 361 gpm in 2012. Note that in CWS response to ORA data request SN2-003, the MDD for Kernville and Arden in this system was 626 gpm.

[147] CWS response to ORA data request for SN2-003, see attachment SN2-003 Q1.xlsx for Kernville/Arden system for 2005 to 2014 and for 2015. ORA estimated 2015 data based on the State Water Resources Control Board (SWRCB) records of cumulative water savings to meet governor's conservation mandate. The records showed that the cumulative savings from June to November 2015 was 20.3%. Therefore, ORA estimated the 2015 MDD of (100%-20.3%) x 521 gpm = 415 gpm.

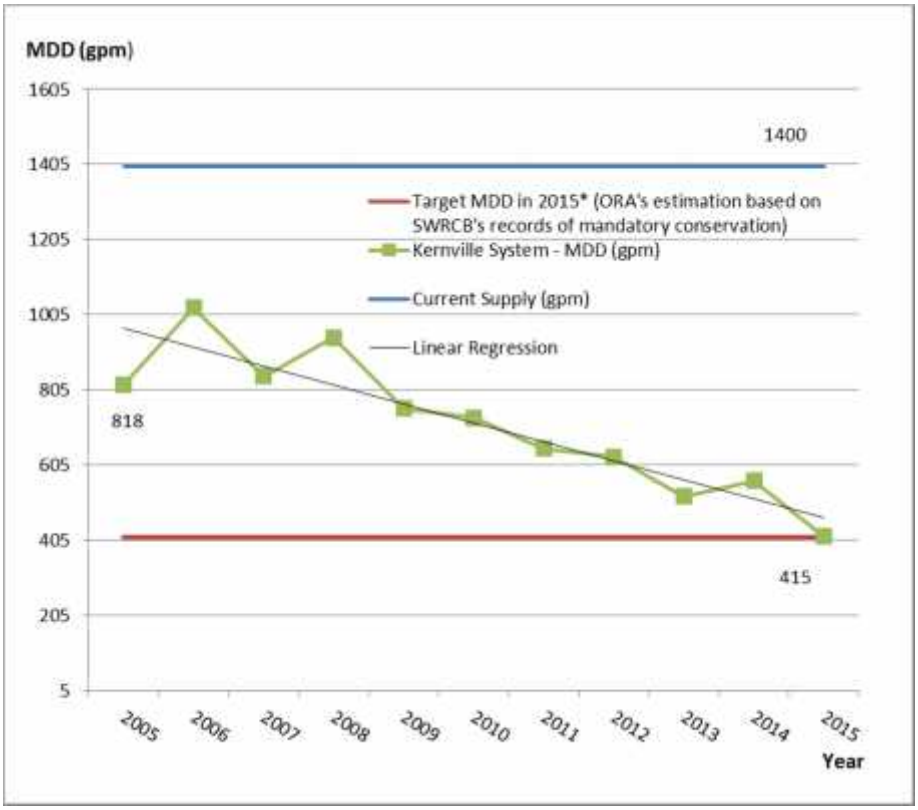
[148] The information is available from State Water Boards website: http://www.swrcb.ca.gov/

Table 3-G: 2005 to 2015 MDD for Kernville system[149]

MDD			
Year	**Thousand Gallons**	**gpm ****	**Target MDD in 2015***
2005	1,178	818	415
2006	1,473	1,023	415
2007	1,211	841	415
2008	1,359	944	415
2009	1,087	755	415
2010	1,052	731	415
2011	933	648	415
2012	902	626	415
2013	750	521	415
2014	811	563	415
2015*	597	415	415
2005 to 2014 MDD in thousand gallons. (See CWS' Response to ORA Data Request SN2-003 Q.1).			
* 2015 data: ORA calculation based on Mandatory Conservation of 20.3%. See SWRCB website.			
** ORA converted the data from Thousand Gallons to gpm.			

[149]CWS response to ORA data request SN2-003, attachment SN2-003 Q1. ORA converted the data from thousand gallons to gpm.

Figure 3-A: 2005 to 2015 MDD trend in Kernville System[150]



Based on DDW report and available data as shown above, there is enough source capacity to meet current Kernville system's demand. The current system supply capacity of 1,400 gpm is more than capable to meet demand of the highest MDD in the last ten years of 1,023 gpm that occurred in 2006.

It should be noted that customer usage has declined in recent years due to conservation efforts. The Governor's recent conservation mandate and the need to meet the SB 7x7 conservation goal have resulted in reduction in water usage. It is reasonable to expect

[150] See CWS Response to ORA Data Request SN2-003 Q.1, 2015 data: ORA calculation based on 20.3% Mandatory Conservation.

customers to continue to conserve water rather than returning 2006 usage levels. As shown above, the 2013 MDD was 521 gpm, and the 2015 MDD of 415 gpm [151] is below the 2013 level due to the conservation mandate. It also should be noted that without the secondary intake, the Kernville system has a 900 gpm total capacity from the SWTP and 11 wells, which exceeds the 2013 demand.

The current challenges with the intake capacity can be attributed to below normal water level in the river as a result of the lack of rainfall. Although California is in a four-year drought, all weather forecasts are calling for the likely occurrence of El Nino weather conditions, which would bring more rainfall and increase water level in the river. In October 2015, the National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center announced the precipitation outlook for winter 2015-16 that will be 40 to 60% wetter than normal.[152] Therefore, the current challenges experienced at the intake are temporary in nature and CWS has implemented a temporary solution by installing an additional intake to supplement the capacity of the existing intake.

Based on the above findings, ORA asserts that the existing intake can provide an adequate source of supply for the Kernville system, and the second intake provides a temporary solution to a temporary drought situation if needed. Therefore, it is not necessary to perform a study to seek a permanent solution for a temporary situation. ORA recommends that the Commission deny CWS's request to perform the intake feasibility study.

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[151] ORA estimated the 2015 MDD data based on the State Water Resources Control Board (SWRCB) records of cumulative water savings to meet governor's conservation mandate. The records showed that the cumulative savings from June to November 2015 was 20.3%. Therefore, ORA estimated the 2015 MDD of (100%-20.3%) x 521 gpm = 415 gpm.

[152] From the National Oceanic and Atmospheric Administration (NOAA) website: https://www.climate.gov/news-features/videos/2015-16-winter-outlook and https://www.climate.gov/sites/default/files/PrecipitationOutlook_Dec15-Feb16_large.png

e. Vehicle Replacements

CWS proposes 5 vehicle replacements in the Kern River Valley district for a total budget of $238,678 in 2016, 2017 and 2018.[153] CWS did not provide a correct supporting data for ORA to verify numbers and information of vehicle replacements in 2017.[154] For this reason presented in ORA's Report on Plant – Common Issues, ORA recommends the following adjustments as shown in **Table 3-H** below.

Table 3-H: Vehicle Replacements – Kern River Valley District

Project ID	Proposed Year	ORA Recommendation	CWS' Request (WP8B5)
00099141	2016	$ 41,521	$ 112,543
00099142	2017	$ -	$ 51,518
00099144	2018	$ 71,022	$ 74,618
Total		$ 112,543	$ 238,679

f. Improve Rafter Ends, Install Ladder, and Earthquake Expansion Joints (PID 97934) for $57,980 in 2016

CWS proposes to improve rafter ends, install a new interior ladder, and install two 8" earthquake expansion joints on piping at Station 11 Tank T1 for $57,980 in 2016. In its application, CWS provides no justification for all proposed projects under $100,000. ORA disagrees with the joint installation of this project, the California Safe Drinking

[153] October 2015 - CWS Workpaper Tab: WP8B3a total budget is $272,278, while Tab: WP8B5a shows a total budget of $238,678. The discrepancy was due to the different information in the two Tabs that CWS has not yet reconciled.

[154] ORA does not have a correct supporting documentation. ORA made a phone call and sent emails to get the information from CWS (Teresita Cayas) on November 20, 2011. ORA followed up by email on the same day with subject Vehicle Workpaper Issue. ORA also followed up in December 8, 2015 with the same subject Vehicle Workpaper Issue. CWS still did not provide the correct information of Vehicle list on Tabs for WP8B3a, and WP8B5a, therefore ORA cannot verify the vehicle replacement request for the year 2017.

Water Act and Related Laws and Regulations, Title 22, Article 6, Distribution Reservoirs (§64585. Design and Construction) specifies that tanks shall be constructed in accordance with the American Water Works Association (AWWA) standards. The State of California and AWWA recommend flexible connections between the tank and piping system to minimize tank damage. It should be noted that provisions for flexibility in tank connection design and construction are not required for existing tanks.[155]

Since this is an improvement project on an existing tank, the design and construction of earthquake expansion joints for this tank are not required. [156] Correspondingly, ORA removes the cost of the two joints from the total budget. However, ORA agrees with the portions to improve rafter ends and install a new interior ladder. Therefore, ORA recommends that the Commission allow only 82% [157] of the requested budget (see **Table 3-B** for 2016).

g. Install airgap and two flexible earthquake expansion joint (PID 97945)

CWS proposes to install an airgap on overflow and two 10" flexible earthquake expansion joints on the tank piping for $32,010 in 2017. ORA disagrees for the same reason as ORA's explanation on the earthquake joints project above (project ID: 97934). Provisions for airgap on overflow in tank connection design and a construction are also

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[155] California Safe Drinking water Act and Related Laws Regulations, Title 22, Chapter 16, Article 6 Distribution Reservoirs – Design and Construction §64585 (b).

[156] California Safe Drinking water Act and Related Laws Regulations, Title 22, Chapter 16, Article 6 Distribution Reservoirs – Design and Construction §64585 (b)

[157] In its response to ORA data request SN2-013, CWS provide justification including the cost breakdown. See Cost Estimate Attachment (97934_ARD11T1 Detail Estimate.pdf). ORA removes the cost of the flexible joints, and adjust accordingly to remove 18% of total budget of $57,980 which is equivalent to $10,436. ($7,542/$42,780 = 17.6%~18%). ORA recommends 82% of the budget.

not required for existing tanks.[158] Therefore, CWS's request of this project should be disallowed.

h. Tank Painting Project at 3 Stations for $301,863 in 2017 and 2018

CWS proposes three tank-painting projects at stations: LLAND Station 7, KERV Station 6, and ARD Station 11, with a total budget of $301,863 in 2017 and 2018.[159] These projects include interior tank painting maintenance that is routinely performed by CWS. CWS provided inconsistent budgets in its work papers and in the project justification report.[160]

ORA analyzed the tank painting projects based on the CWS's recorded budget of completed projects with similar tank size[161] and the areas that need to be painted per tank inspection reports and recommends the amount of $301,863 be approved.

2. Non-Specific Budgets for 2016 to 2018

CWS requests $572,100 in the Non-Specific Budget to address unforeseen, unplanned, and emergency projects and regulatory compliant projects. ORA's Report on Plant - Common Issues recommended total disallowance of this budget.

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[158] California Safe Drinking water Act and Related Laws Regulations, Title 22, Chapter 16, Article 6 Distribution Reservoirs – Design and Construction 64585 (b).

[159] CWS Kern River District electronic Workpaper Tab: WP10D2a.

[160] CWS Project Justification Report, page KRV PJ –251 to 253 shows a total of $485,159.

[161] CWS response to ORA data request for DG-023, Page 4, and Tank Painting completed projects from 2010 to 2014.

3. 2015 Capital Budget

CWS requests approximately $3,018,316 for plant additions in 2015, which consist of projects authorized for 2015 in the last GRC and projects authorized from previous GRCs. ORA's Report on Plant - Common Issues presents its analysis and basis for adjusting 2015 capital additions for Kern River Valley.

ORA also adjusts the project below to conform with the recommended carryover budget.

a. Replace SCADA Computers in Treatment Plant (PID 97279)

CWS proposes to replace the SCADA computers at the Kernville treatment plant for $135,600 by using 2012 adopted budgets with PIDs: 75834 and 75835 that were cancelled.[162] ORA finds no project justification or breakdown cost submitted in this application and this project is not previously authorized in the prior GRC.

In the Report on the Result of Operation (RO) for the Kern River Valley District Page 34, CWS identifies the project 97279 under *Carryover* projects with description of 'Replace the SCADA Computers in Treatment Plant.' It has a revised cost of $167,929.[163] However, ORA also found a budget of this project (97279) for $121,219, which is listed

[162] According to the RO report, the project was created by combining PIDs 75834 & 73835 of $135, 600. These two projects were cancelled and listed in Section G on page 35. See the cancelled project table and also the bottom page explanation.

[163] According to the RO Report, the project was created by combining PIDs 75834 & 73835 of $135, 600. These two projects were cancelled and listed in Section G on page 35, See the cancelled project table and also the bottom page explanation.

under *Non-Specific* projects.[164] In a response to ORA data request, CWS explains that due to significant delays from the contractor the cost currently increases to $240,000.[165]

CWS provides contradictive information in its RO Report, work papers and its response to ORA's data request. In addition, there are no explanations or cost breakdown provided explaining why the cost of the SCADA computers increased. For this reason, ORA removes the project cost from the non-specific budget of $121,219[166] and the 2015 carryover budget of $167,929.[167]

D. CONCLUSION

ORA's recommendations presented above have been incorporated in the calculations for ORA's recommended Plant in Service as shown in Table 7-1 in Company-wide Report, Appendix RO.

[164] CWS Oct 2015 Workpaper for Kern River Valley district, electronic copy, see Tab WP8B8a Line 6: estimated start date 6/1/2014, estimated completed date 3/31/2015 for $121,219.

[165] CWS Response to ORA Data Request SN2-011, Q.1.

[166] CWS Oct 2015 Workpaper for Kern River Valley district, electronic copy, see Tab WP8B8a Line 6: estimated start date 6/1/2014 completed date 3/31/2015 for $121,219

[167] CWS Oct 2015 Workpaper for Kern River Valley district, electronic copy, see Tab WP8B7a, Line 17 for $167,929 in the Carryover Projects from 2012.

Chapter 4: Plant – King City District

A. INTRODUCTION

This chapter presents ORA's analyses and recommendations for Plant in Service for CWS's King City District.

B. SUMMARY OF RECOMMENDATIONS

Based on ORA's review and analysis of CWS's requested plant additions, ORA recommends disallowance, adjustment, deferral or Advice Letter treatment where appropriate. These recommendations form the basis of ORA's recommended capital budget summary presented in **Table 4-A** below. ORA's estimated plant additions also reflect recommendations in its Common Plant Issues testimony regarding Main Replacement Program, Meter Replacement Program, and Vehicles. **Table 4-B** presents ORA project-specific adjustments.

Table 4-A: Capital Budget Summary – King City District

King City ($000)	2015	2016	2017	2018	Annual Average
ORA	$ 1,100.6	$ 178.1	$ 1,132.3	$ 675.4	$ 771.6
CWS	$ 1,945.6	$ 828.5	$ 2,422.5	$ 1,922.8	$ 1,779.8
CWS > ORA	$ 845.0	$ 650.3	$ 1,290.2	$ 1,247.4	$ 1,008.2
ORA as % of CWS	57%	22%	47%	35%	40%

Table 4-B: Capital Budget Details – King City District

2015	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	21303	Willow and Mildred - 875' 16" D.I.; 3 Hydrants Phase 3 of 6 Phases	$ 360,280	$ 529,200	$ 168,920	68%
	61953	Paint Exterior Complete - Sta. 11 Tank 1	$ -	$ -	$ -	0%
	63855	Replace 4" Meter and Vault - 450 Jayne St.	$ 36,833	$ 27,100	$ (9,733)	136%
	KCD0900	Meter Replacement Program	$ -	$ 19,554	$ 19,554	0%
	63798	Field - 3 Itron FC300 Hand Held Computer, Charging Bases, and Cables	$ -	$ 22,074	$ 22,074	0%
Specifics Total			**$ 397,112**	**$ 597,927**	**$ 200,815**	**66%**
Non-Specifics Total			**$ 84,300**	**$ 116,050**	**$ 31,750**	**73%**
Carry-Overs Total			**$ 619,190**	**$ 1,231,594**	**$ 612,404**	**50%**
TOTAL 2015			**$ 1,100,603**	**$ 1,945,571**	**$ 844,969**	**57%**

2016	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00097829	Replacement of pump and motor.	$ -	$ 52,607	$ 52,607	0%
	00097830	Replacement of pump and motor.	$ -	$ 61,936	$ 61,936	0%
	00098117	Hydrant Meter Reduced Pressure Principal Assembly	$ 6,884	$ 6,884	$ -	100%
	00098680	Purchase locate equipment to replace obsolete equipment.	$ -	$ 5,463	$ 5,463	0%
	00098686	Vacuum accessory for valve turning machine. Needed to clean out valve box to then operate valves with machine. Will be mounted on same trailer as machine.	$ 4,371	$ 4,371	$ -	100%
	00098699	Install new valve casings. Existing valve casings are obsolete, deteriorated, and do not allow access to main valve for maintenance.	$ 19,505	$ 67,765	$ 48,260	29%
	00098711	The 2016 main replacement program will replace 898 feet of pipelines in the King City district at an estimated cost of $257 per foot.	$ 142,776	$ 333,396	$ 190,620	43%
	00098745	Replace firehydrants that are obsolete and have no control valves with new hydrants.	$ -	$ 101,648	$ 101,648	0%
	00100343	Replace Telog Data recorders	$ 4,152	$ 4,152		100%
	KCD0900	Meter Replacement Program	$ 439	$ 43,651	$ 43,212	1%
Specifics Total			**$ 178,126**	**$ 681,872**	**$ 503,746**	**26%**
Non-Specifics Total			**$ -**	**$ 146,600**	**$ 146,600**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2016			**$ 178,126**	**$ 828,472**	**$ 650,346**	**22%**

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2017	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00097831	Replacement of pump and motor.	$ 49,449	$ 49,449	$ -	100%
	00097832	Replacement of pump and motor.	$ -	$ 63,485	$ 63,485	0%
	00098313	965 feet of 16" DI Main of Ellis St and Russ St to corner of Ellis St and Third St 965 feet	$ 430,498	$ 744,286	$ 313,788	58%
	00098694	Install new valve casings. Existing valve casings are obsolete, deteriorated, and do not allow access to main valve for maintenance.	$ 19,505	$ 48,622	$ 29,117	40%
	00098743	Install new firehydrants that are obsolete and have no control valves.	$ -	$ 80,767	$ 80,767	0%
	00098984	16" DI Installations from the Corner of Mildred and Ellis St to Ellis St and Russ St 1,090 ft	$ 486,262	$ 805,092	$ 318,830	60%
	00099096	The 2017 main replacement program will replace 898 feet of pipelines in the King City district at an estimated cost of $257 per foot.	$ 146,146	$ 341,730	$ 195,584	43%
	00099321	Install an antenna tower at station 15 to relocate the SCADA equipment from the elevated tank at station 11.	$ -	$ 94,356	$ 94,356	0%
	KCD0900	Meter Replacement Program	$ 450	$ 44,743	$ 44,293	1%
Specifics Total			**$ 1,132,310**	**$ 2,272,529**	**$ 1,140,219**	**50%**
Non-Specifics Total			**$ -**	**$ 150,000**	**$ 150,000**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2017			**$ 1,132,310**	**$ 2,422,529**	**$ 1,290,219**	**47%**

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2018	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00098332	16" DI Corner of Ellis St and Third St to Ellis St to First St 965	$ 441,260	$ 743,905	$ 302,645	59%
	00098477	Replace top (8) rungs of interior ladder; Replace (20) rafter ends; Replace interior safety climb rail	$ 46,343	$ 46,343	$ -	100%
	00098687	Copier is obsolete and parts are not readily available.	$ 18,368	$ 18,368	$ -	100%
	00098695	Install new VFD at King City Station 12	$ -	$ 59,482	$ 59,482	0%
	00098697	Install new valve casings. Existing valve casings are obsolete, deteriorated, and do not allow access to main valve for maintenance.	$ 19,505	$ 49,837	$ 30,332	39%
	00098744	Replace fire hydrants that are obsolete and have no control valves.	$ -	$ 106,794	$ 106,794	0%
	00098762	Install a well level tranducer at station 6. Connect to SCADA	$ -	$ 16,711	$ 16,711	0%
	00099099	The 2018 main replacement program will replace 898 feet of pipelines in the King City district at an estimated cost of $257 per foot.	$ 149,478	$ 350,274	$ 200,796	43%
	00099170	Replace the SCADA system server and software. This is a the district portion of a combined project to replace all of the SCADA system software and hardware throughout Cal Water.	$ -	$ 331,849	$ 331,849	0%
	KCD0900	Meter Replacement Program	$ 460	$ 45,861	$ 45,401	1%
Specifics Total			**$ 675,413**	**$ 1,769,424**	**$ 1,094,011**	**38%**
Non-Specifics Total			**$ -**	**$ 153,400**	**$ 153,400**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2018			**$ 675,413**	**$ 1,922,824**	**$ 1,247,411**	**35%**

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C. DISCUSSION

The King City District recorded $1,347,948 per year in average gross plant additions for the most recent four-year period 2009-2014.[168] Table 4-C compares CWS's and ORA's estimates against recorded annual average gross plant additions.

Table 4-C: Capital Budget Summary and Recorded Expenditures– King City District

King City ($000)	2015	2016	2017	2018	Annual Average	% of Recorded
2009-2014 Recorded	--	--	--	--	$ 1,347.9	100%
ORA	$ 1,100.6	$ 178.1	$1,132.3	$ 675.4	$ 771.6	57%
CWS	$ 1,945.6	$ 828.5	$2,422.5	$ 1,922.8	$ 1,779.8	132%

ORA presents a discussion on its analyses and recommended adjustments to CWS's requested capital budget for specific projects (Section 1), 2016 to 2018 Non-Specific Budget (Section 2), and 2015 Budget (Section 3) below.

1. Specific Projects

In this GRC, CWS proposes $4,723,826 for specific projects in 2016 to 2018. These projects consist of Main Replacement Program, Small and Large Meter Replacement Program, Supervisory Control and Data Acquisition (SCADA) software and hardware installation, Replace Fire Hydrants, 16-inch Ductile Iron main replacements, Pump replacements, Replace locate equipment, Replace valve casings, Install new antenna

[168] Gross plant additions include company funded plant additions as well as contributions and advance deposits for specific plant.

tower, Install well transducer, VFD installation, and Tank Painting. The following sections provide a discussion for each specific project that ORA does not recommend.

a. Pipeline Replacement Program

CWS requests approximately $1,025,400 to replace a total of 2,694 feet of pipeline between 2016 to 2018. ORA evaluated the leak rate, water loss, system age, results of American Water Works Association's (AWWA) recommended pipeline replacement model, historical replacement rate, and replacement cost for each district and provided a detailed evaluation of CWS's pipeline replacement proposal in ORA's Common Plant Issues Testimony (see ORA's Report on Plant – Common Issues). Table 4-D below shows ORA's recommendations for pipeline replacement and the associated budget in this district.

Table 4-D: Pipeline Replacement Program Budget – King City District

YEAR	PID	ORA's Recommendation		CWS's Proposal	
		Length (ft)	Budget	Length (ft)	Budget
2016	00098711	736	$ 142,776	898	$ 333,396
2017	00099096	736	$ 146,146	898	$ 341,730
2018	00099099	736	$ 149,478	898	$ 350,274
Total		$ 2,208	$ 438,400	$ 2,694	$ 1,025,400

b. Small and Large Meter Replacement Program

Table 4-E below lists CWS's requests and ORA's recommendation on the replacement budget of small and large meters in the King City District. ORA's recommended budgets are based on detailed analysis and recommendation in its Report on Plant-Common Issues.

Table 4-E: Meter Replacement Budgets – King City District

District:	King City		
YEAR	PID	ORA's Recommendation	CWS's Proposal
2016	0900	$ 439	$ 43,651
2017	0900	$ 450	$ 44,743
2018	0900	$ 460	$ 45,861

c. Replace SCADA Software and Hardware (99181) for $331,849 in 2018

CWS proposes to replace SCADA software and hardware for $331,849 in 2018. For the reasons presented in ORA's Report on Plant - Common Issues, ORA recommends disallowing the project.

d. Replace Fire Hydrants (PIDs 98745, 98743 and 98744) for a total of $289,209 in 2016, 2017, and 2018

CWS proposes to replace fire hydrants with a total budget of $289,209 in 2016, 2017, and 2018.[169] CWS states that existing hydrants have been in the system since the acquisition in 1962. Many of the hydrants have no control valves and cannot be shut off when leaks occur.[170] CWS also argues that the hydrants are obsolete and sub-standard with inadequate ports for fire protection.[171]

[169] CWSs Project Justification Report, page KC PJ – 7 and 8: B. Proposed Project List, see project ID: 98745, 98743 and 98744 in years 2016, 2017 and 2018 on the table of Capital Project List.

[170] Ibid, page KC PJ- 205, Lines 18-19.

[171] Ibid, page KC PJ- 205, Lines 19-20.

ORA disagrees with CWS's approach because CWS did not provide any documentation to substantiate the claim that the hydrant cannot be shut-off when leaks occur. Also, CWS provided no documentation that the local fire authority requested the replacement of all hydrants in the system. General Order 103A – VI. Fire Protection Standards states that "[t]he utility shall not be responsible for modifying or replacing at its expense any existing facilities, which are otherwise adequate, in order to provide increased fire flow or duration due to changes in the standards after the initial construction."[172] CWS could have but did not provide leak records from the hydrants or any other evidence indicating that the hydrants are "otherwise inadequate." Due to insufficient evidence, ORA recommends the Commission deny the projects. Table 4-F below lists CWS's request and ORA's recommendation on the replacement fire hydrant projects.

Table 4-F: Fire Hydrant Replacements – King City District[173]

District:	*King City*		
YEAR	**PID**	**ORA's Recommendation**	**CWS's Proposal**
2016	00098745	$0	$ 101,648
2017	00098743	$0	$ 80,767
2018	00098744	$0	$ 106,794
Total		$0	$ 289,209

[172] General Order 103 – VI. Fire Protection Standards – 3. Replacement of Mains, p. 25. See Section 3. Replacement of Mains and 4. Fire Hydrants.

[173] CWSs Project Justification Report, page KC PJ – 7 and 8: B. Proposed Project List, see project ID: 98745, 98743 and 98744 in years 2016, 2017 and 2018 on table of Capital Project List. And CWSs Project Justification Report, KC PJ- 205, Lines 10-20.

e. 16-inch Ductile Iron Main Replacement at Ellis St. (PIDs 98984, 98313 and 98332) for a total of $2,293,282 in 2017 and 2018

CWS proposes to replace 16-inch Ductile Iron (DI) transmission mains on Ellis Street for a total budget of $2,293,282 in 2017 and 2018 as shown on **Table 4-G** below.[174]

Table 4-G: 16-inch DI Main Replacement[175]

PID	ORA's Recommendation			CWS's Proposal		
	YEAR	Length (ft)	Budget	YEAR	Length (ft)	Budget
98984	2017	1,090	$ 486,262	2017	1,090	$ 805,092
98313	2017	965	$ 430,498	2017	965	$ 744,286
98322	2018	965	$ 441,260	2018	965	$ 743,905
		TOTAL	$ 1,358,020		TOTAL	$2,293,282

CWS states the transmission main will bring low nitrate water from the West to Zone 555 on the East side of town.[176] This transmission main project had started since the 2009 GRC. CWS separated the project into six phases over a minimum of three rate cases (9

[174] CWS Project Justification Report, page KC PJ – 7 and 8: B. Proposed Project List, see project ID: 98745, 98743 and 98744 in years 2016, 2017 and 2018 on the table of Capital Project List.

[175] Ibid, page KC PJ – 213 to 217. See capital project cost estimates for the 3 projects.

[176] Ibid, page KC PJ – 7 and 8, and page KC PJ- 20, Lines 10-20. CWS stated that existing hydrants have been in the system in since the acquisition in 1962. Many of the hydrants have no control valves and can be shut off when leaks. Some Hydrants are obsolete and sub-standard with inadequate ports for fire protection. Note that while claiming the hydrants is sub-standard with the port for fire protection, CWS did not include any violation notices from the Fire Department.

years) to minimize the impact to the ratepayers.[177] The three projects on **Table 4-G** represents Phases 4 to 6 to complete the replacement of the pipelines. [178]

ORA does not contest the need of the project. However, ORA disagrees with the unit costs of the project. In its Project Justification Report, CWS estimated the project budget based on unit costs in 2014 that ranges from $538 to $555/foot.[179] These unit costs were very high compared to unit cost of the phase 3 project completed in 2015. The phase 3 project has a unit cost of $309/foot,[180] compared to CWS's proposed unit cost that range between $552 to $569/foot [181] in 2015. Based on phase 3 project unit cost that is more recent than CWS's cost basis provided in it PJ Report, ORA estimates the Phases 4 to 6 projects in 2017 and 2018 including contingency, overhead and 2.5% escalation factor as follows:

[177] Ibid, page KC PJ – 213, Lines 22-26.

[178] Ibid, page KC PJ – 213, Lines 28-29.

[179] CWS Project Justification Report, page KC PJ – 215 to 217, ORA's calculation of 2014 unit cost for project 98984, ***sub total*** of $586,695/1090 = $538.25 per ft. Using the same methodology ORA found, project 98313 sub total of $535,770/965 ft. = $555.2 per ft. and for project 98332 is $522,435/965= $541.38.

PID 21303: Phase 3 main replacement project (Completed 2015).	Length	Total Cost	
	875	$ 360,280	
	Total Cost/Length	$ 412	per foot
	Less 25% Over Head	$ 309	per foot
	Unit Cost in 2015	**$ 309**	**per foot**

[181] Ibid, page KC PJ – 215 to 217, ORA's calculation of 2014 unit cost for project 98984, sub total of $586,695/1090 = $538.25 per ft. Using the same methodology ORA found, project 98313 sub total of $535,770/965 ft. = $555.2 per ft. and for project 98332 is $522,435/965= $541.38. Using escalation factor of 2.5%, the 2015 unit costs are between $551.71 and $569.08

Table 4-H: ORA's recommended Phase 4 to 6 for 16-inch DI Main Replacements[182]

	Project Phase	4	5	6
	Proposed Year	2017	2017	2018
	Length (feet)	1090	965	965
2015 Unit Cost/foot	$ 309	$ 336,604	$ 298,003	$ 298,003
Contingency @10%	10%	$ 33,660	$ 29,800	$ 29,800
Subtotal		$ 370,265	$ 327,803	$ 327,803
Overhead @25%	25%	$ 92,566	$ 81,951	$ 81,951
Subtotal in 2015		$ 462,831	$ 409,754	$ 409,754
Escalated to 2016	2.50%	$ 474,402	$ 419,998	$ 419,998
Escalated to 2017	**2.50%**	**$ 486,262**	**$ 430,498**	$ 430,498
Escalated to 2018	**2.50%**	$ 498,419	$ 441,260	**$ 441,260**

Therefore, ORA recommends that the Commission adopt budgets of main replacement projects of phases four, five and six as listed on **Table 4-H**.

f. Pump Replacements (PIDs 97830, 97829, 97832, and 97831) for $227,477 in 2016 and 2017

CWS proposes four pump and motor replacement projects with a total budget of $227,477 in 2016 and 2017. CWS asserts the pumps are needed for efficiency improvements.[183] **Table 4-I** shows ORA's recommendation and CWS's proposed budget.

[182] Ibid, page KC PJ – 213 to 217. See capital project cost estimates for the 3 projects.

[183] Ibid, page KC PJ – 7 and 8 and CWS' electronic Workpapers: Excel spreadsheet (King City Discovery 2015.xlsx)

Table 4-I: Pump Replacements in King City District[184]

Year	Project ID	Project Description	Overall Plant Efficiency	CWS Efficiency Rating	ORA's Recommendation	CWS's Proposal
2016	00097830	Replacement of pump and motor at Sta. 8 (1)	71.16	VERY GOOD	$ -	$ 61,936
2016	00097829	Replacement of pump and motor at Sta. 4 (C)	39.67	LOW	$ 52,607	$ 52,607
2017	00097831	Replacement of pump and motor at Sta. 4 (D)	52.83	FAIR	$ -	$ 49,449
2017	00097832	Replacement of pump and motor at Sta. 6 (1)	56.99	FAIR	$ -	$ 63,485
				Total	$ 52,607	$ 227,477

Pumps and motors should only be replaced when efficiency tests justify the need of replacement. In ORA's Report on Plant – Common Issues, ORA presents CWS's and ORA's pump and motor replacement approaches and proposals.

In response to ORA's data request, CWS provided pump test performance results from 2011 to 2014 for each pump in the district.[185] Based on the available pump test results, ORA recommends the replacement of one pump with a low rating.

g. Replace Obsolete Locate Equipment (PID 98680) for $5,463 in 2016

CWS proposes to replace obsolete locate equipment for $5,463 in 2016. In its work papers, CWS only provided a description of the project as shown below: [186]

[184] CWS Response to ORA Data Request A1507015 - DG-024, See Excel spreadsheet Attachment DG-024-2-a (MDR II F 8 Pump Efficiency).xlsx

[185] CWS Response to ORA Data Request A1507015 DG-024, See Excel spreadsheet Attachment DG-024-2-a (MDR II F 8 Pump Efficiency).xlsx

[186] CWS electronic Workpapers: Excel spreadsheet (King City Discovery 2015.xlsx). See Tab WP8B5a work order number or PID 98680.

Table 4-J: Purchase locate equipment– King City District[187]

year	work_order_number	long_description	justification_detail	specific
2016	00098680	Purchase locate equipment to replace obsolete equipment.	Replace obsolet locate equipment.	$ 5,463.16

It is unclear what kind of "locate equipment" CWS requested, and why it's needed. As shown above, CWS's description and justification lack any details and ORA cannot asses the reasonableness of the request. CWS could have provided more information to identify the equipment and more justification to clarify the need of the request. Due to insufficient information about this equipment and no evidence supporting that this equipment is obsolete, ORA recommends the Commission deny this project.

h. Replace Valve Casings (PIDs 98699, 98694 and 98697) for $166,223 in 2016, 2017, and 2018

CWS proposes to replace five[188] valve casings per year in 2016, 2017, and 2018 for a total budget of $166,223.[189] According to CWS, the project will install new main line valve casings and covers in place of obsolete valve casings that have been used since the system was acquired more than 40 years ago. CWS claims that there are numerous valve casings and covers throughout the system that still have the Pacific Gas and Electric (PG&E) Company valve covers or are deteriorated. Additionally, these valve casings do

[187] CWS Project Justification Report, page KC PJ – 7, B. Proposed Project List, see Project ID: 98680.

[188] CWS Response to ORA Data Request A1507015 - SN2-017, Q.1: Capital Project Justification, Attachment SN2-017 Q1(a,b,c)-1.pdf

[189] CWS' electronic Workpapers: Excel spreadsheet (King City Discovery 2015.xlsx). See lines10, 35 and 59 project IDs: 98699, 98694 and 98697 in years 2016, 2017 and 2018 respectively.

not allow enough room for maintenance and operating the valve.[190] CWS's budgets in 2016 to 2018 for the replacements of 5-valve casings per year are shown below:

Table 4-K: Valve Casing Replacements – King City District[191]

District:	King City		
YEAR	PID	ORA's Recommendation Proposal	CWS's Proposal
2016	00098699 Install new valve casings. Existing valve casings are obsolete, deteriorated, and do not allow access to main valve for maintenance.	$19,505	$67,765
2017	00098694 Install new valve casings. Existing valve casings are obsolete, deteriorated, and do not allow access to main valve for maintenance.	$19,505	$48,621
2018	00098697 Install new valve casings. Existing valve casings are obsolete, deteriorated, and do not allow access to main valve for maintenance.	$19,505	$49,837
	Total	$58,515	$166,223

ORA does not contest the need of the project but disagrees with the costs. As shown on Table 4-K, CWS's estimated cost of 5 casings in 2016 is higher than those in 2017 and 2018 estimates. CWS explains that the higher cost estimate was projected under a prior master contract.[192] The new master contract estimates a lower casing installation cost of $3,901 per unit.[193] Based on the new master contract ORA updated the casing replacement estimate for an annual cost of cost $19,505 per year (5 cases x

[190] CWS Response to ORA Data Request A1507015 - SN2-017, Q.1: Capital Project Justification, see Attachment SN2-017 Q1(a,b,c).pdf

[191] Ibid, page KC PJ – 7 and 8: B. Proposed Project List, see project ID: 98699, 98694 and 98697 in years 2016, 2017 and 2018.

[192] CWS Response to ORA Data Request A1507015 - SN2-017, Q.1, See Table 1 Rows: 1 to 3.

[193] CWS Response to ORA Data Request A1507015 - SN2-017, Q.1: Capital Project Justification, see Attachment SN2-017 Q1(a,b,c)-2.pdf

$3,901/casing). For this reason, ORA recommends the Commission adopt ORA's proposed costs shown in **Table 4-K**.

i. Install a new Antenna Tower for SCADA equipment at Station 15 (PID 99321) for $94,356 in 2017

CWS proposes to install a new antenna tower for SCADA equipment at Station 15 for $94,356 in 2017. Currently, the SCADA equipment antenna is attached to the elevated tank T1 at Station 11, see **Figure 4-A.**[194] CWS claims that the elevated tank needs to be demolished due to its poor condition.[195] Therefore, according to CWS, a new antenna tower is needed to continue SCADA communication in the district and the new tower will be installed at the Station 15.[196]

[194] This picture (Tank T1 at Station 11) was taken by Susana Nasserie during the ORA field trip to King City district on 9/2/2015.

[195] CWS Workpapers for King City, see tab WP8B5a, CWS stated "The King City SCADA communications equipment is installed on the elevated tank at station 11. The elevated tank is in poor shape and we plan to demo and remove the tank. The SCADA equipment needs to be relocated before we can demolish the tank."

[196] CWS Workpapers for King City, see tab WP8B5a, CWS stated "The King City SCADA communications equipment is installed on the elevated tank at station 11. The elevated tank is in poor shape and we plan to demo and remove the tank. The SCADA equipment needs to be relocated before we can demolish the tank."

Figure 4-A: SCADA Antenna at Elevated Tank (T1) at Station 11

ORA disagrees with this project at this time. In the last GRC, CWS proposed to paint the tank T1 at Station 11 (PID 61953) and in D.14-08-01, the Commission authorized a budget of $150,732 in 2015 to paint the tank.

In this GRC, CWS proposes to remove the antenna from the elevated tank and install a new antenna tower in 2017, but has no project proposal in this GRC to demolish the elevated tank. CWS is not clear with the plan of the elevated tank, whether to paint it or to demolish it. CWS also did not provide justification of the urgency and a schedule in this rate cycle to demolish the elevated tank. Based on CWS's uncertainty regarding the existing tank, ORA cannot determine that the new tower installation for SCADA equipment is warranted at this time. Therefore, ORA recommends the Commission deny

this project. ORA also recommends that the Commission deny the project to paint the elevated tank (PID 61953) for a budget of $150,732 in 2015.[197]

j. Install a Well Transducer at Station 6 (PID 98762) for $16,711 in 2018

CWS proposes to install a well level transducer at Station 6 for $16,711 in 2018. According to CWS, currently a CWS employee takes well level readings once per month.[198] However, CWS explains that monthly readings do not provide enough data points to be considered in identifying production trends. The well level transducers would allow for daily readings, which would better identify production trends.

ORA disagrees with the project because according to CWS, there is no requirement for the company to take well level readings daily. In addition, CWS explains that the cost associated with manual reading is approximately $65 per month or $780 per year.[199] In comparison, the annual revenue requirement associated with the well level transducer is $3,342.[200] This is nearly five times the current cost paid by ratepayers. There are no cost savings associated with this project, as there will be a net increase in expenses of $3,342-$780 = $2,562 per year.

Based on the above information, the project is unnecessary and it is not a prudent investment. Therefore, ORA recommends the Commission deny this project.

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[197] In CWS' workpapers (King City Discovery 2015. xlsx) Tab WP10D2, it identified as a carryover project to start in 2016.

[198] Email from James Polanco of CWS, to Daphne Goldberg of ORA (December 14, 2015, 4:06 PM) (on file with author).

[199] Email from James Polanco of CWS, to Daphne Goldberg of ORA (December 14, 2015, 4:06 PM) (on file with author).

[200] Revenue requirement = 20% x $16,711 = $3,342.

k. VFD Installation for Station 12 (PID 98695) for $59,482 in 2018

CWS proposes to install VFD at Station 12 for $59,482 in 2018.[201] According to CWS, currently there is a VFD available at Station 14 to maintain system pressures during low demand periods. [202] The VFD at Station 14 is needed especially when one of the wells supply produces more than its demand and the Station13 storage tank is full.[203] By having the VFD in the Station 14, the well production can be adjusted automatically to avoid inconsistent pressure during a low demand periods. However, CWS claims, if the well at Station 14 is down for maintenance, the district will not have a way of regulating the flow from its wells. Therefore, to provide reliable alternative during the low demand periods an installation of VFD at Station 12 is needed.

ORA disagrees with this project because CWS did not provide information of how often its staff needs to perform the task to avoid the inconsistent pressure events during the low demand periods. In addition, as shown in the **Table 4-L** below, there was no pressure issue in the last three years from 2012 to 2014.

[201] CWS Project Justification Report, page KC PJ –8: B. Proposed Project List, project ID: 98695.

[202] CWS Response to ORA Data Request A1507015 - SN2-017, Q.1, file: Attachment SN2-017 Q1(d).pdf, Lines 17-19.

[203] CWS Response to ORA Data Request A1507015 - SN2-017, Q.1, file: Attachment SN2-017 Q1(d).pdf, Lines 17-27.

Table 4-L: Water Quality Complaints in King City District[204]

	2012	2013	2014	3 Yr Total
AIR	0	0	0	0
DIRTY	0	0	1	1
NOISE	1	1	1	3
PRESSURE	0	0	0	0
SAND	0	0	0	0
TAST/ODR	0	0	0	0
Yearly Totals	**1**	**1**	**2**	

Based on no pressure complaints in 3 years, it does not give any indication the district is having pressure problems. This project is not prudent and not a cost effective investment if the VFD will not be used adequately.

It is also important to note that even though CWS did not include a cost estimate of electrical panel upgrade,[205] it is unclear if the electrical panel to accomodate the VFD will be included for the project in a future GRC or the current electrical panel already is in compliance to meet the VFD installation requirement. ORA cannot verify whether CWS already presented the entire cost estimate for this project.

ORA finds that CWS provided insufficient justification for ORA to verify the needs of the project. For this reason, ORA recommends the Commission deny the project.

[204] CWS Response to Minimum Data Request (MDR) – Item H1 (electronic copy) Tab: WQ Complaints for King City district.

[205] CWS Response to ORA Data Request A1507015 - SN2-017, Q.1, file: Attachment SN2-017 Q1(d1).pdf.

l. Tank Painting (PID 98192) at Station 10 for $142,413 in 2018

CWS proposes a tank-painting project to partially recoat a 2.224 million gallons welded steel tank (KC 010-T1) at Station 10 for $142,413 in 2018.[206] Based on the pictures and the tank inspection report,[207] ORA does not contest the need to recoat the tank. However, ORA disagrees that CWS proceed with the project at this time. During the site visit,[208] CWS explained that this tank belongs to the city of King City. CWS is leasing the Station10 plant from the city. [209] However, in its justification CWS did not include any lease agreement or contract agreement with the city to justify that the tank painting and maintenance cost should be CWS's responsibility. ORA recommends that the Commission deny this project unless CWS can provide documentation from the City requiring CWS to maintain and repair the tank.

2. Non-Specific Budgets for 2016 to 2018

CWS requests $450,000 in the Non-specific Budget to address unforeseen, unplanned, and emergency projects and regulatory compliant projects. ORA's Report on Plant - Common Issues presents ORA's recommended total disallowance of budget.

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[206] CWS Project Justification Report, page KC PJ –235 to 241, See Project Description and Project Cost of The High Performance Coating Project Estimate at page KC PJ - 241.

[207] CWS provided the tank pictures during the field tour on September 2, 2015. The tank inspection report was provided as CWS's response to ORA data request DG-023.

[208] ORA's field trip to King City on September 2, 2015, CWS mentioned that the tank belongs to the City and it is a leased station from the City.

[209] CWS RO Report for King City District, page 17. See Table Storage Facility (Scheduled -2).

3. 2015 Capital Budget

CWS requests approximately $1,945,600 for plant additions in 2015, which consist of projects authorized for 2015 in the last GRC and projects authorized from previous GRCs. ORA's Report on Plant - Common Issues presents its analysis and recommended 2015 capital additions for King City.

D. CONCLUSION

ORA's recommendations presented above have been incorporated in the calculations for estimated Plant in Service as shown in Table 7-1 in its Company-wide Report, Appendix RO.

Chapter 5: Plant – Salinas District

A. INTRODUCTION

This chapter presents ORA's analyses and recommendations for Plant in Service for CWS's Salinas District.

B. SUMMARY OF RECOMMENDATIONS

Based on ORA's review and analysis of CWS's requested plant additions, ORA recommends disallowance, adjustment, deferral or Advice Letter treatment where appropriate. These recommendations form the basis of ORA's recommended capital budget summary presented in **Table 5-A** below. ORA's estimate plant additions also reflect recommendations in its Common Plant Issues testimony regarding Pipeline Replacement Program, Meter Replacement Program, Pump Replacement, SCADA replacement, Vehicle Replacement, Flow Meters, AMI/AMR, Generator Replacement, and Control Valves Replacements. **Table 5-B** presents ORA project-specific adjustments.

Table 5-A: Capital Budget Summary – Salinas District

Salinas ($000)	2015	2016	2017	2018	Annual Average
ORA	$ 7,240.1	$ 3,910.6	$ 3,311.5	$ 3,116.8	$ 4,394.7
CWS	$ 14,888.1	$ 14,297.6	$ 11,906.1	$ 23,411.7	$ 16,125.9
CWS > ORA	$ 7,648.0	$ 10,387.0	$ 8,594.6	$ 20,294.9	$ 11,731.2
ORA as % of CWS	49%	27%	28%	13%	29%

Table 5-B: Capital Budget Details – Salinas District

2015	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	62092	Hydrants - City Agreement	$ 68,958	$ 62,992	$ (5,967)	109%
	62135	Replace 30 Valve Covers & Casings - Various	$ -	$ 54,402	$ 54,402	0%
	62992	Blow Offs - Sta. 32, 44, 50	$ -	$ 134,520	$ 134,520	0%
	63092	1546' 8" PVC; 36 1" Services; 2 Hydrants - Riker	$ 551,512	$ 422,400	$ (129,112)	131%
	63858	2141' 8" PVC; 168 6" PVC; 67 1" Services; 3 Hydrants - Tyler Street Abandon old 6" AC main.	$ -	$ 677,158	$ 677,158	0%
	63955	Electric Gate Field Yard	$ -	$ 78,731	$ 78,731	0%
	64077	Replace Well Pumping Equipment & Well Level Transducer - Sta. 26-01	$ -	$ 82,509	$ 82,509	0%
	64177	Pipeline Upgrade - Sta. 47 - Phase 2	$ 1,655,625	$ 1,470,703	$ (184,923)	113%
	64932	Vehicle - 0.75 Ton Pick Up & Accessories -	$ -	$ 42,824	$ 42,824	0%
	66830	11 SCADA RTUs - Sta. 32, 33, 40, 49, 53, 57, 60, 61, 73, 203, 47	$ -	$ 332,173	$ 332,173	0%
	66889	25 Well Level Sensors - Sta. 6, 12, 13, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 37, 38, 44, 50-1, 50-2, 56, 58, 63	$ -	$ 128,874	$ 128,874	0%
	66890	7 Well Level Sensors - Sta. 64, 65, 67, 70, 71, 106,	$ -	$ 36,084	$ 36,084	0%
	73813	Replace 10 Metering Pumps - Various Stations	$ -	$ 36,000	$ 36,000	0%
	SLN0900	Meter Replacement Program	$ -	$ 206,147	$ 206,147	0%
Specifics Total			**$ 2,276,095**	**$ 3,765,516**	**$ 1,489,420**	**60%**
Non-Specifics Total			**$ 566,297**	**$ 2,458,450**	**$ 1,892,153**	**23%**
Carry-Overs Total			**$ 4,397,681**	**$ 8,664,153**	**$ 4,266,472**	**51%**
TOTAL 2015			**$ 7,240,073**	**$14,888,119**	**$ 7,648,046**	**49%**

2016	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	97458	Salinas CP System Upgrade -2016 - Sta.16 Tank	$ 23,574	$ 23,574	$ -	100%
	97815	Replacement of pump and motor.	$ 67,092	$ 67,092	$ -	100%
	97816	Replacement of pump and motor.	$ -	$ 67,092	$ 67,092	0%
	97817	Replacement of pump and motor.	$ 67,092	$ 67,092	$ -	100%
	97818	Replacement of pump and motor.	$ 67,092	$ 67,092	$ -	100%
	97819	Replacement of pump and motor.	$ 52,607	$ 52,607	$ -	100%
	98022	The district needs a maintenance facility to support our leak truck and Vacum truck. This will include a location for vac truck spoils and bins for leak repair materials. Station 41 is the site location.	$ -	$ 724,599	$ 724,599	0%
	98026	District Leak detection equipment is outdated and unreliable. New technology is avalible and the district is in need of leak detection equipment.	$ 10,927	$ 10,927	$ -	100%
	98061	Salinas district needs to replace handheld metal detection equipment. New technology exist.	$ 2,185	$ 2,185	$ -	100%
	98062	Upgrade valve truck (V202002) with articulating machine, high pressure water and small vacuum	$ 115,821	$ 115,821	$ -	100%
	98090	Replace bunkers that hold repair materials and Spoils at the yard.	$ 31,519	$ 31,519	$ -	100%
	98112	Purchase new trimble geo 7x GPS unit.	$ 13,166	$ 13,166	$ -	100%
	98173	Purchase Tapping machine for the district Leak	$ 7,649	$ 7,649	$ -	100%
	98188	Hydrant Meter Reduced Pressure Principal	$ 24,094	$ 24,094	$ -	100%
	98193	Purchase and Install AMR system in the Buena Vista system in the Salinas District.	$ -	$ 133,434	$ 133,434	0%
	98198	Upgrade valve operating machines on V208001 and V208006.	$ 109,265	$ 109,265	$ -	100%
	98286	Install new blowoffs for flushing and water quality in various locations, quantity of 9.	$ 51,603	$ 51,603	$ -	100%
	98487	Furniture for four field offices.	$ 108,125	$ 108,125	$ -	100%
	98489	Replace pressure tank at station 58 Country	$ 154,457	$ 154,457	$ -	100%
	98505	Clark 24 Volt Walke Straddle for warehouse	$ 19,231	$ 19,231	$ -	100%
	98557	Replace vault and PRV located on Prestancia Way. ID 114_000_035	$ 29,817	$ 29,817	$ -	100%
	98602	Replacement of 2 control valves in Salinas. Location: 114_000_CV002. 114_000_CV002	$ -	$ 58,532	$ 58,532	0%
	98622	Upgrade all fire hydrant in the Toro Park area to Clow 950 quantity of 7 total. Current hydrant heads are old and need to be upgraded to provide	$ 100,331	$ 100,331	$ -	100%
	98634	Install Back up Generator sta 25 Salinas	$ -	$ 261,370	$ 261,370	0%
	98673	Replacement of 6 control valves in Salinas. Location: 114_000_CV010. 114_303_CV001, 114_203_CV001, 114_047_CV002, 114_203_CV002, 114_063_CV001	$ 117,065	$ 175,597	$ 58,532	67%
	98926	Replace 4 flow meters in new vaults at Stations. Location TBD	$ -	$ 180,707	$ 180,707	0%
	98985	Remove and replace existing booster pumps at	$ -	$ 466,452	$ 466,452	0%
	99233	The 2016 main replacement program will replace 10,096 feet of pipelines in the Salinas district at an estimated cost of $376 per foot.	$ 2,540,539	$ 5,659,360	$ 3,118,821	45%
	99238	Vehicle Replacements > 120,000 miles	$ 41,521	$ 88,505	$ 46,984	47%
	99329	Replace the generator at Salinas Station 30	$ -	$ 193,920	$ 193,920	0%
	99347	VFD Installtion for station16	$ 95,829	$ 95,829	$ -	100%
	99380	Purchase property to drill new well in 280 zone.	$ -	$ 601,237	$ 601,237	0%
	100317	Replace Telog Data recorders	$ 13,172	$ 13,172	$ -	100%
	101336	Purchase land in 155 zone for new well station to meet supply deficit.	$ -	$ 601,237	$ 601,237	0%
	SLN0900	Meter Replacement Program	$ 46,825	$ 370,001	$ 323,176	13%
Specifics Total			**$ 3,910,594**	**$10,746,687**	**$ 6,836,092**	**36%**
Non-Specifics Total			**$ -**	**$ 3,550,900**	**$ 3,550,900**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2016			**$ 3,910,594**	**$14,297,587**	**$ 10,386,992**	**27%**

1

2017	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	97512	Construct 150,000 Gallon tank at Buena Vista Station 70 to meet storage needs for the system	$ -	$ 768,652	$ 768,652	0%
	97820	Replacement of pump and motor.	$ 53,922	$ 53,922	$ -	100%
	97821	Replacement of pump and motor.	$ 49,449	$ 49,449	$ -	100%
	97823	Replacement of pump and motor.	$ 49,449	$ 49,449	$ -	100%
	97824	Replacement of pump and motor.	$ -	$ 63,485	$ 63,485	0%
	98191	Purchase new trimble GPS units	$ 26,991	$ 26,991	$ -	100%
	98209	Replace the generator at Salinas Station 29	$ -	$ 198,069	$ 198,069	0%
	98279	Complete sampling equipment for the district leak	$ 11,200	$ 11,200	$ -	100%
	98315	Purchase 5 PH Meters	$ 2,688	$ 2,688	$ -	100%
	98347	Replace with 36" cupola vent at SLN 201-T2	$ 11,260	$ 11,260	$ -	100%
	98388	Purchase 5 Hach Pocket II Phosphate	$ 4,004	$ 4,004	$ -	100%
	98389	Purchase 5 Hach Pocket II Colorimeters.	$ 2,234	$ 2,234	$ -	100%
	98417	Purchase 5 Grundfos chemical injection pumps.	$ 12,503	$ 12,503	$ -	100%
	98432	Replace the existing roof of the redwood tank at SLN 055-T1	$ 56,196	$ 56,196	$ -	100%
	98467	Replace PRV vault on Tomas Rd. in Las Lomas	$ 53,484	$ 53,484	$ -	100%
	98497	Two Message Boards to display for construction.	$ 39,423	$ 39,423	$ -	100%
	98603	Replacement of 3 control valves in Salinas. Location: 114_106_CV001, 114_305_CV001, 114_202_CV001	$ 44,997	$ 89,994	$ 44,997	50%
	98929	Replace 2 flow meters in new vaults at Stations. Location TBD	$ -	$ 65,282	$ 65,282	0%
	98932	Install RTU at Station 41 to Monitor system	$ -	$ 39,426	$ 39,426	0%
	98934	Replace the RTU Panels at 6 stations	$ -	$ 157,790	$ 157,790	0%
	99236	The 2017 main replacement program will replace 10,096 feet of pipelines in the Salinas district at an estimated cost of $376 per foot.	$ 2,600,496	$ 5,800,844	$ 3,200,348	45%
	99240	Vehicle Replacements > 120,000 miles	$ 89,543	$ 180,315	$ 90,772	50%
	100740	Vehicles for Proposed Complement	$ -	$ -	$ -	0%
	101284	Install new blowoffs for flushing and water quality in various locations, quantity of 9.	$ 52,893	$ 52,893	$ -	100%
	101306	Upgrade all fire hydrant in the Toro Park area to Clow 950 quantity of 7 total. Current hydrant heads are old and need to be upgraded to provide adequate fire protection.	$ 102,840	$ 102,840	$ -	100%
	SLN0900	Meter Replacement Program	$ 47,931	$ 379,252	$ 331,321	13%
Specifics Total			**$ 3,311,501**	**$ 8,271,641**	**$ 4,960,141**	**40%**
Non-Specifics Total			**$ -**	**$ 3,634,500**	**$ 3,634,500**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2017			**$ 3,311,501**	**$11,906,141**	**$ 8,594,641**	**28%**

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2018	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	97826	Replacement of pump and motor.	$ 65,072	$ 65,072	$ -	100%
	97827	Replacement of pump and motor. Sta. 201-01	$ -	$ 65,072	$ 65,072	0%
	98195	Purchase new trimble GPS units	$ 27,666	$ 27,666	$ -	100%
	98241	Replace the generator at Salinas Station 33	$ -	$ 198,241	$ 198,241	0%
	98414	Replacement well in Buena Vista System at existing station 72.	$ -	$ 2,334,052	$ 2,334,052	0%
	98493	Two Porta-potties with sink on trailer	$ 12,628	$ 12,628	$ -	100%
	98500	Forklift for warehouse	$ 37,883	$ 37,883	$ -	100%
	98604	Replacement of 4 control valves in Salinas. Location: 114_016_CV001, 114_016_CV002, 114_017_CV001, 114_017_CV002	$ 61,496	$ 122,991	$ 61,495	50%
	98607	Pipeline connecting Country Meadows to Salinas Main system on Harrison Road	$ -	$ 2,976,497	$ 2,976,497	0%
	98930	Replace 4 flow meters in new vaults at Stations. Location TBD	$ -	$ 88,273	$ 88,273	0%
	99176	Replace the SCADA system server and software. This is a the district portion of a combined project to replace all of the SCADA system software and hardware throughout Cal Water.	$ -	$ 786,297	$ 786,297	0%
	99237	The 2018 main replacement program will replace 10,096 feet of pipelines in the Salinas district at an estimated cost of $376 per foot.	$ 2,659,788	$ 5,945,865	$ 3,286,077	45%
	99242	Vehicle Replacements > 120,000 miles	$ 43,623	$ 142,348	$ 98,725	31%
	99286	Drill a new well and install treatment in 280 zone to address supply defict in the zone	$ -	$ 3,295,572	$ 3,295,572	0%
	101287	Install new blowoffs for flushing and water quality in various locations, quantity of 9.	$ 54,215	$ 54,215	$ -	100%
	101307	Upgrade all fire hydrant in the Toro Park area to Clow 950 quantity of 7 total. Current hydrant heads are old and need to be upgraded to provide adequate fire protection.	$ 105,411	$ 105,411	$ -	100%
	101331	Drill new well in 155 zone in Salinas Main system to address supply deficit.	$ -	$ 3,047,525	$ 3,047,525	0%
	SLN0900	Meter Replacement Program	$ 49,023	$ 388,733	$ 339,710	13%
Specifics Total			**$ 3,116,804**	**$19,694,340**	**$ 16,577,536**	**16%**
Non-Specifics Total			**$ -**	**$ 3,717,400**	**$ 3,717,400**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2018			**$ 3,116,804**	**$23,411,740**	**$ 20,294,936**	**13%**

C. DISCUSSION

The Salinas District recorded $6,731,230 in annual average plant additions for the most recent six-year period 2009-2014.[210] Table 5-C compares CWS's and ORA's estimates against recorded annual average gross plant additions.

Table 5-C: Capital Budget Proposals vs. Recorded Expenditures – Salinas District

Salinas ($000)	2015	2016	2017	2018	Annual Average
2009-2014 Recorded	--	--	--	--	$ 6,731.2
ORA	$ 7,240.1	$ 3,910.6	$ 3,311.5	$ 3,116.8	$ 4,394.7
CWS	$ 14,888.1	$ 14,297.6	$ 11,906.1	$ 23,411.7	$ 16,125.9

ORA presents its analyses and recommended adjustments to CWS's requested capital budget for specific projects (Section 1), 2016 to 2018 Non-Specific Budgets (Section 2), and 2015 Budget (Section 3) below.

1. Specific Projects

In this GRC, CWS proposes a total of $38,712,668 for specific projects, which also include Pipeline Replacement Program, Land Purchases, Well Constructions, Tank Construction, Dump Facility Construction, Interconnection between systems, Pump Replacements, Small and Large Meter Replacement Program, SCADA Software and Hardware Replacements, Vehicle Replacements, Flow Meter Replacements, Advance Metering Infrastructure (AMI)/Automatic Meter Reading (AMR), Generator

[210] Gross plant additions include company-funded plant additions as well as contributions and advance deposits for specific plant.

Replacements, Valve Replacements, and Remote Terminal Unit (RTU) Replacements. Following are ORA's recommended disallowances and adjustments:

a. Pipeline Replacement Program

CWS requests approximately $17,436,069 to replace a total of 30,288 feet of pipeline between 2016 and 2018. ORA evaluated the leak rate, water loss, system age, results of AWWA's recommended pipeline replacement model, historical replacement rate, and replacement cost for each district and provided a detailed evaluation of CWS's pipeline replacement proposal in ORA's Common Plant Issues Testimony (see ORA's Report on Plant – Common Issues). **Table 5-D** below shows ORA's recommendations for pipeline replacement and the associated budgets in this district.

Table 5-D: Pipeline Replacement Program Budget – Salinas District

YEAR	PID	ORA's Recommendation		CWS's Proposal	
		Length (ft)	Budget	Length (ft)	Budget
2016	00099233	9,011	$ 2,540,539	10,096	$ 5,689,360
2017	00099236	9,011	$ 2,600,496	10,096	$ 5,800,844
2018	00099237	9,011	$ 2,659,788	10,096	$ 5,945,865
	Total	27,033	$ 7,800,823	30,288	$ 17,436,069

b. Land Purchase in 280 Zone (PID 99380) - $601,237 in 2016 and New Well in 280 Zone (PID 99286) - $3,295,572 in 2018

CWS proposes to add a new well in the Salinas System's Pressure Zone 230/280 (also referred to as Zone 280) – this includes a land purchase project for $601,237 in 2016 and a well construction project for $3,295,572 in 2018.[211] The total budget of the two projects is $3.9 million.

[211] CWS Project Justifications Report presents the land purchase cost as $606,404; ORA uses the $601,237 estimate presented in CWS's workpapers [Salinas Discovery 2015.xlxs TAB WP8B5a].

According to CWS, its supply-demand analysis for Zone 280 shows a supply surplus of 0.42 MGD, or 292 gallons per minute (gpm).[212] CWS claims that this surplus figure is deceiving, stating that if the existing smallest well goes down, the zone would have a deficit of 0.08 MGD (55 gpm).[213] For that reason, CWS proposes to add a new well with a capacity of 1,100 gpm.[214] As explained below, the new well is not needed and these two project requests should be denied.

i. The Division of Drinking Water's 2015 Report did not identify any supply capacity deficiency in the Salinas System

The March 17, 2015 Sanitary Survey Report for the Salinas System (where Zone 280 is located) by the State Water Resources Control Board's Division of Drinking Water (DDW) states that the system has adequate source capacity, and did not identify any supply capacity deficiency that should be addressed by CWS. Moreover, the total supply considered in the DDW Report did not include a new 1,500 gpm (2.16 MGD) [215] well at Station 108 in Zone 280, which is expected to be completed in March 2016 and increase the zone's total supply availability from 30,150 gpm[216] to 31,650 gpm.[217]

ii. Zone 280 Zone has a supply surplus, not deficiency

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[212] CWS Project Justifications Report, page SLN PJ – 334, Lines 28 to 30.

[213] Ibid, page SLN PJ – 334, Line 31.

[214] Ibid, page SLN PJ – 339, Lines 12-13.

[215] CWS Response to ORA Data Request A1507015- SN2-010, Q.3.a and b. PID 61633, A new well in Station 108 will be completed in March, capable of producing up to 1,500 gpm. ORA calculated the capacity of 1,500 gpm = 2.16 MGD.

[216] March 17, 2015 Sanitary Survey Report for the Salinas System (No. 270010) by the State Water Resources Control Board's Division of Drinking Water, see page 4 of 18. Total active capacity of 43.4 million gallon per day (MGD) or 30,150 gpm.

[217] 30,150 gpm + 1,500 gpm = 31,650 gpm.

CWS's supply-demand calculation shows a 0.08 MGD (55.6 gpm) supply deficit in Zone 280.[218] CWS's calculation is not valid: one, CWS understates its supply capacity by inappropriately excluding one of its well sources; and two, CWS overstates the capacity need by using the 2004 demand data.[219] This demand data is outdated and does not reflect the significant downward trend in consumption due to the implementation of conservation programs and the recent drought mandates to reduce consumption.

CWS understates Zone 280's supply capacity.

Neither the Commission's General Order 103-A (GO 103-A) nor Title 22 of the California Code of Regulations (CCR Title 22) on drinking water standards requires excluding an active well source when determining supply availability. GO 103-A's general requirement regarding "Standards of Service" requires that "[e]ach water utility shall ensure that it complies with the Department's permit requirements and all applicable drinking water regulations."[220] With regards to capacity requirements, GO 103-A refers specifically to "the Waterworks Standards, CCR Title 22, Section 64554," stating:

> 3) Potable Water System Capacity
>
> (a) A system's facilities shall have the capacity to meet the source capacity requirements as defined in the Waterworks Standards, CCR Title 22, Section 64554, or its successor. If, at any time, the system does not have this capacity, the utility shall request a service connection moratorium until such time as it can demonstrate the source capacity has been increased to meet system requirements.

[218] CWS Project Justification Report, page SLN PJ – 344, Table Salinas 280/230 Zones – Losing smallest source (Station 106) – Leads to MDD deficit.

[219] Ibid, page SLN PJ – 344, Table Salinas 280/230 Zones – Losing smallest source (Station 106) – Leads to MDD deficit.

[220] GO 103-A, Section II.1.B. "Department" refers to the then California Department of Public Health Services, whose public drinking water system regulatory functions are now performed by the State Water Resources Control Board's Division of Drinking Water or DDW.

Based on the above directions, ORA relies on the California Waterworks Standards (CCR Title 22, Chapter 16) to determine the available supply capacity. For existing systems such as the Salinas System, there is no requirement to exclude a source of supply's capacity when calculating available supply capacity to meet demand. Therefore, it is inappropriate for CWS to exclude one of its smallest wells in the system with a capacity of 350 gpm (0.5 MGD)[221] in calculating total available supply in Zone 280.

Further, CWS fails to consider the additional capacity that will be available beginning in March 2016 when it expects to complete a new well with a capacity to produce 1,500 gpm in Zone 280.[222] This new well would provide additional capacity to the zone, and should be considered in CWS's supply analysis.

CWS overstates the demand in Zone 280.

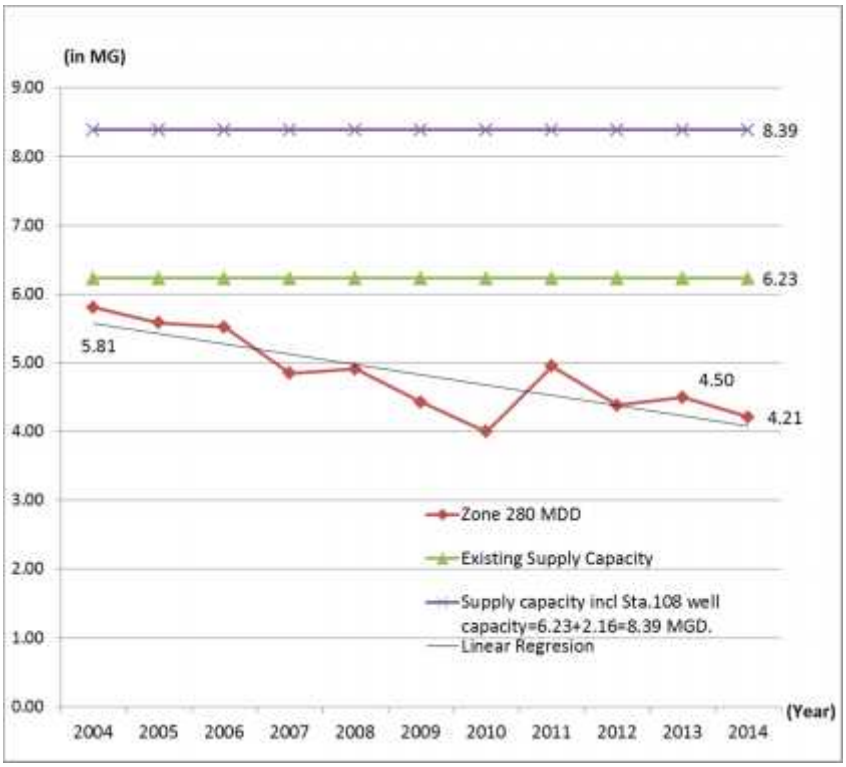
In its Zone 280 supply-demand analysis, CWS's use of the 2004 MDD of 5.81MGD [223] significantly overstates the expected demand for this zone. **Figure 5-A** below shows Zone 280's recorded MDDs and the declining trend.

[221]CWS Project Justification Report, page SLN PJ – 344, Table Salinas 280/230 Zones – Losing smallest source (Station 106) – Leads to MDD deficit.

[222] CWS Response to ORA Data Request A1507015- SN2-010, Q.3.a and b.

[223] CSW's response to ORA Data Request A1507015- SN2-008, Q. 3. See tabs Demand Summary (KGAL) and Zonal Demand for Zone 280/230 indicated 5805 Kgal (5.81 MGD)

Figure 5-A: Zone 280's Recorded MDD[224]



As shown above, Zone 280's MDD has been steadily decreasing, from 5.81 MGD in 2004 to 4.21 MGD[225] in 2014, a total reduction of 28%. This decreasing demand is consistent with CWS's conservation efforts and CWS needs to meet the SB 7x7 conservation goal for 2020. In light of the decreasing trend, using the 2004 MDD

[224] Because CWS did not provide MDD for 2014, ORA calculates the 2014 MDD by applying a 9-year recorded average peaking factor from (2005 to 2013) to recorded Average Day Demand (ADD). The data of 2005 to 2013 ADD, MDD, PHD and 2014 ADD for Zone 280 is available from CSW's response to ORA Data Request A1507015- SN2-003, Q. 1. Attachment SN2-003 Q1.xlsx See Tab Salinas for Zone 280/230. The data of Zone 280's supply is available from CWS Project Justification Report, page SLN PJ – 344.

[225] Because CWS did not provide MDD for 2014, ORA calculates the 2014 MDD by applying a 9-year recorded average peaking factor from (2005 to 2013) to recorded Average Day Demand (ADD). The ADD and MDD data is from CSW's response to ORA Data Request A1507015- SN2-003, Q. 1. Attachment SN2-003 Q1.xlsx See Tab Salinas for Zone 280/230.

overstates the expected demand in Zone 280. Furthermore, it is not appropriate to use 2004 data because it is over 13 years old and unreasonably skews the analysis in favor of show a supply deficit, when none exist.

Zone 280 has sufficient capacity to meet expected demand.

Table 5-E below presents ORA's analysis, using differing demand and supply assumptions, and demonstrates that even under the most restrictive assumptions, Zone 280 does not have a supply capacity deficit. Therefore, CWS's request to purchase land and construct a new well is unjustified and should be rejected.

Table 5-E: Zone 280 Supply-Demand Analysis (in MGD) [226]

If using	Demand	Supply capacity incl. new well at Station 108	Deficit?	Supply capacity incl. new well at Station 108, and excl. smallest well	Deficit?
2014 MDD	4.21	8.39	No	7.89	No
2013 MDD	4.50	8.39	No	7.89	No
2012 MDD	4.38	8.39	No	7.89	No
2011 MDD	4.95	8.39	No	7.89	No
2010 MDD	4.00	8.39	No	7.89	No
2009 MDD	4.43	8.39	No	7.89	No
2008 MDD	4.91	8.39	No	7.89	No
2007 MDD	4.85	8.39	No	7.89	No
2006 MDD	5.52	8.39	No	7.89	No
2005 MDD	5.58	8.39	No	7.89	No
Supply capacity = 6.23 MGD, Station 108 well capacity = 2.16 MGD, Smallest well capacity = 0.5 MGD.					
Supply capacity including 108 well capacity=6.23+2.16=8.39 MGD.					
Supply capacity incl. new well at Station 108, and excl. smallest well = 8.39 - 0.5=7.89 MGD					

[226] Using the same data sources in Figure 5-A.

c. Station 47 Pump Replacements (PID 98985) - $446,452 in 2016

CWS proposes to upgrade and replace well and booster pumps at Station 47 in Zone 155 for $466,452 in 2016;[227] this project includes adding a third booster pump, replacing a well pump and a booster pump, adding an acoustic shelter, and improving the piping to connect the new booster pump to the station and distribution system. CWS also proposes to upgrade the electrical panelboard, which it claims is necessary for the installation of the third booster pump and to increase the well pump capacity.[228]

Station 47 is located in Pressure Zone 155 in the Salinas System. Existing facilities at Station 47 consist of one well with a capacity of 2,300 gallon per minute (gpm), two booster pumps with a total capacity of 2,300 gpm, a 1.5 million gallon tank, a 3,000 gallon surge tank, two panelboards, and nitrate treatments facilities for groundwater pumped from Station 21.[229]

With this project, CWS proposes to increase the well pump capacity from 2,300 gpm to 3,000 gpm, upgrade Booster Pump B from 1,500 gpm to 2,000 gpm, and add a third booster pump with a capacity of 2,000 gpm. Subsequently, the booster capacity increases from 2,300 gpm to 5,500 gpm.[230] CWS claims that the changes are needed to meet the Peak Hour Demand (PHD) in Zone 155, which currently has a 0.90 MGD (625 gpm) deficit.[231]

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[227] CWS Project Justification Report, Page SLN-PJ 323, lines 12 to 28.

[228] Ibid, Page SLN-PJ 323, lines 23 to 24.

[229] Ibid, Page SLN-PJ 323, lines 12 to 28.

[230] Ibid, Page SLN-PJ 325, lines 91 to 92. CWS stated that the capacity of each existing booster pump is 1,500 gpm, yielding a total booster capacity of 3,000 gpm.

[231] Ibid, Page SLN-PJ 323, lines 34 to 36.

CWS's claimed deficit has been resolved.

Aside from the fact that CWS's analysis of customer demand is based on data from 2004, CWS misrepresented current system operating conditions to justify the need for this project. According to CWS, even though each of the two booster pumps (47-A and 47-B) at Station 47 can provide 1,500 gpm, the combined capacity of the two booster pumps is only 2,300 gpm. CWS claims that the total booster pump capacity is "limited by the getaway pipe from the station which is being upsized as part of a 2012 GRC project."[232]

In the 2012 GRC, CWS proposed two projects (PIDs 64095 and 64177) to upgrade a pipeline from Station 47 to allow it to accommodate existing booster pump capacity of 3,000 gpm and to "provide enhanced peaking capacity".[233] D.14-08-011 authorized the construction of the pipeline upgrades as proposed. CWS reported that it has completed the construction of PIDs 64095 and 64177 for a total cost of $5.3 million in 2015.[234] Therefore, the pipelines have been upgraded and the total booster pump capacity of 3,000 gpm is no longer "limited by the getaway pipe." Upgrading the pipelines provides an additional 700 gpm (difference between 3,000 gpm and 2,300 gpm) of booster capacity during period of PHD, resolving the 625 gpm[235] deficit claimed by CWS. Hence, the need for adding and upgrading booster pump capacity to address a PHD deficit is no longer necessary.

[232] CWS Project Justification Report, page SLN PJ-324, lines 60 to 62.

[233] CWS 2012 GRC Project Justification Report for the Salinas District, page 80 (lines 31-32) and page 81 (lines 38-39).

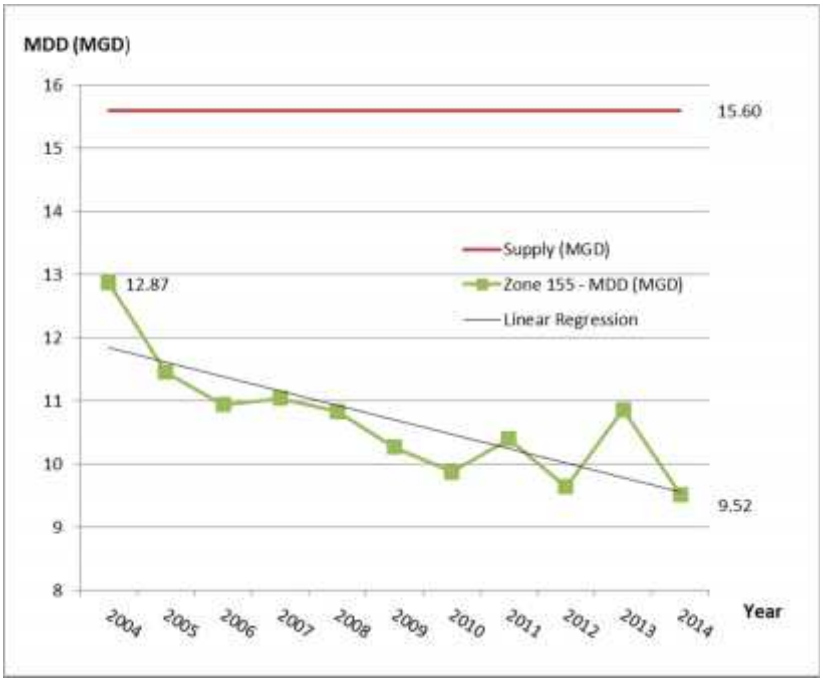
[234] CWS Response to ORA DR A1507015-JA-009, Attachment JA-009 Q1.xlsx and Update of Specific Projects done in 2015.xlsx (provided on 1/11/16).

[235] CWS Project Justification Report, Page SLN-PJ 323, lines 35 to 36.

Additional production capacity is not needed in Zone 155.

Similar to the decreasing trend of customer demand occurring in Zone 280 (PID 99286), **Figure 5-B** below shows Zone 155's recorded MDD and the declining trend.

Figure 5-B: Zone 155's Recorded MDD[236]



As shown above, Zone 155's MDD has been steadily decreasing, from 12.87 MGD in 2004 to 9.52 MGD[237] in 2014, a total of reduction of 26%.[238] This decreasing demand is

[236] Because CWS did not provide MDD for 2014, ORA calculates the 2014 MDD by applying a 9-year recorded average peaking factor (pf) from (2005 to 2013) to the ADD. 2014 MDD= pf x 2014 ADD = 1.47 x 6.49 MGD = 9.52 MGD. The data of 2005 to 2013 ADD, MDD, PHD and 2014 ADD for Zone 155 is available from CSW's response to ORA Data Request A1507015- SN2-003, Q. 1. The data of Zone 155's supply is available from CWS Project Justification Report, page SLN PJ – 366 with ORA calculation with scenario if Nitrate Treatment Wells (Sta. 6, 20, and 37) are discontinued, see Table 5-F, ORA derives the supply capacity of 15.6 MGD.

consistent with CWS's conservation efforts and CWS needs to meet the SB 7x7 conservation goal for 2020. In light of the decreasing trend, using the 2004 MDD overstates the expected demand in Zone 155. Furthermore, it is not appropriate to use 2004 data because this data is outdated and it would be 13 years old by the 2017 Test Year. Based on the above information, Zone 155 has an excess supply of 15.60 MGD – 9.52 MGD = 6.08 MGD (4,222 gpm), which is more than sufficient to provide for the MDD. Therefore, CWS's proposal to increase well pump capacity from 2,300 gpm to 3,000 gpm is unnecessary and should be denied.

Booster Pump 47-B replacement is an authorized project in the 2012 GRC

ORA agrees with the need to replace pumps that exhibit a low efficiency rating. In the 2012 GRC, CWS proposed to replace Booster Pump 47-B with PID 64092 and was authorized to construct the project in 2014. CWS's Results of Operations Report for the Salinas District identifies the pump replacement project as a carry-over project that CWS has initiated but has not completed in 2015.[239] Therefore, it is not necessary to include the cost of this project in rate base again.

Based on the above, ORA recommends the Commission deny CWS's request for the upgrading of pumping and booster capacity at Station 47.

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[237] Because CWS did not provide MDD for 2014, ORA calculates the 2014 MDD by applying a 9-year recorded average peaking factor (pf) from (2005 to 2013) to the ADD. 2014 MDD= pf x 2014 ADD = 1.47 x 6.49 MGD = 9.52 MGD. The data of 2005 to 2013 ADD, MDD, PHD and 2014 ADD for Zone 155 is available from CSW's response to ORA Data Request A1507015- SN2-003, Q. 1.

[238] (12.87-9.52)/12.87 = 26%

[239] CWS Results of Operation Report, Salinas District, page 31. ORA removed the budget for this pump replacement (PID 64092) from 2015 because it is a recorded year (See Common Issue Plant discussion on 2105 Budget). ORA agrees to replace the booster pump 47-B (PID 97818) for $67,092 in 2016 (See **Table 5-H** Pump Replacement Budgets –Salinas District).

d. Land Purchase in Zone 155 (PID 101336) - $601,237 in 2016 and New Well in Zone 155 (PID 101331) - $3,047,525 in 2018

CWS proposes to add a new well in Zone 155, which includes a land purchase of $601,237 in 2016, and a new well construction project for $3,047,525 in 2018. The combined cost of the two projects is $3,648,762. CWS proposes to construct an additional well to replace the loss of supply from three nitrate impacted wells that it plans to turn off.[240] CWS claims that it is less costly to drill a new well than treat nitrate impacted water from wells at Stations 6, 20, and 37 at an annual cost of $324,000.[241]

The proposed project should be denied for several reasons:

1) Zone 155 has sufficient capacity to meet customers' demand without the operation of wells at Stations 6, 20, and 37.

2) Blending water from Well 22-01 was not considered.

3) CWS failed to consider potential water impacts and treatment costs. There is no guarantee that the new well water would not contain nitrate.

4) CWS's cost analysis failed to consider other necessary costs.

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[240] CWS – Salinas District's PJ Report Page SLN-PJ 361, lines 47 to 48.

[241] CWS – Salinas District's PJ Report Page SLN-PJ 354, lines 30 to 31 and Page SLN-PJ 358.

i. Zone 155 has sufficient supply even without the three wells at which CWS proposes to discontinue treatment/operation.

According to CWS's analysis, Zone 155 would experience a deficit of 0.54 MGD during periods of PHD if CWS discontinue pumping water from Stations 6, 20, and 37.[242] The combined capacity of the three wells is 1,950 gpm (2.81 MGD): SNL-006-01 (550 gpm), SLN-020-01 (500 gpm), and SLN-037-01 (900 gpm).[243]

CWS claims that the MDD in Zone 155 is 8,934 gpm (or 12.87 MGD) and the PHD is 13,401 gpm.[244] This demand data is from 2004 and is outdated.[245] The 2004 demand data does not capture CWS's implementation of strong conservation programs, and new State conservation and drought mandates. Similar to ORA's discussion for PID 99286 (Zone 280 Well), this demand data no longer represents current operating conditions. Aside from the fact that CWS relied on an outdated demand data, CWS's evaluation of the PHD scenario is flawed. CWS claims that the PHD is 13,401 gpm or 19.3 MGD while the supply is 18.76 MGD, resulting in a deficit of 0.54 MGD.[246] This implies that the PHD occurs over a period of 24 hours. Neither the Commission's GO 103-A nor the CCR Title 22 on drinking water standards requires that a system has the capacity to meet the PHD for 24 hours. Section 64554 of the CCR Title 22 requires water systems to have

[242] CWS Project Justification Report, page SLN-PJ 366, see table Salinas 155 Zone – Peak Hour Demand scenario if Nitrate Treatment Wells (Station 6, 20, and 37) are discontinued.

[243] Ibid, page SLN-PJ 366, see Table Salinas 155 Zone – Peak Hour Demand scenario if Nitrate Treatment Wells (Station 6, 20, and 37) are discontinued.

[244] Ibid, page SLN PJ-366.

[245] CWS Response to ORA Data Request A1507015 SN2-008, Question 3. See Attachment SN2-008 Q3.xlsx MDD of 8,934 gpm and PHD of 13,401 gpm occurred in 2004.

[246] Ibid, page SLN PJ-358.

the capacity to meet 4 hours of PHD with source capacity, storage capacity, and/or emergency connections.[247] [Emphasis added.]

Excluding the production from Wells at Stations 6, 20, and 37, the current source capacity in Zone 155 is 10,825 gpm as shown in **Table 5-F.**

Table 5-F: Available Source Capacity in Zone 155 Excluding Wells 6, 20, and 37.[248]

Wells	Capacity (gpm)
SLN-12	700
SLN-17	500
SLN-19	700
SLN-26	500
SLN-30	525
SLN-56	800
SLN-64	1,200
SLN-67	1,800
SLN-47	2,300
SLN-68	1,800
Total	**10,825**

Therefore 10,825 gpm (15.6 MGD) of the PHD is met with the source capacity and the remaining PHD of 2,576 gpm (13,401 gpm less 10,825 gpm) needs to be met with storage capacity, and/or emergency connections. The storage tanks in the Zone 155 need to provide for four hours of 2,576 gpm, which is 618,450 gallons. Zone 155 has a total storage capacity of 1.88 MG, which can provide over three times the storage needs during the PHD. Therefore, there is enough capacity to meet the required 4 hours of PHD. As

[247] California Code of Regulations, Title 22, Division 4, Chapter 16, Article 2, Section 64554(a)(2).

[248] CWS Project Justification Report, page SLN PJ-366, see Table Salinas 155 Zone – Peak Hour Demand scenario if Nitrate Treatment Wells (Station 6, 20, and 37) are discontinued.

previously noted, the CCR Title 22 only requires 4 hours of PHD because the Peak Hour Demand does not occur over a 24-hour period of time.

ii. CWS failed to consider less costly option.

CWS conducted a study to evaluate the feasibility of blending nitrate impacted water from Well 21-01 with clean water from Well 47-01 as required by the Settlement Agreement between ORA and CWS in the 2012 GRC.[249] The results of the study indicate that blending is a feasible alternative, which will provide Zone 155 with an ***BEGIN CONFIDENTIAL*** [redacted][250] ***END CONFIDENTIAL*** Apparently, blending is a viable less costly alternative for increasing supply in Zone 155, which CWS failed to consider in its request to address a perceived supply deficiency.

iii. CWS failed to consider water quality impacts and treatment costs. There is no guarantee that the new well water would not contain nitrate.

Zone 155 has many known water quality problems. During ORA's Salinas site visit, CWS's Water Quality Program Manager explained that the Salinas System has many water quality concerns including nitrate, methyl tertiary butyl ether (MTBE), uranium and other constituents (chloride, iron and others). CWS's presentation/document provided to ORA during the site visit states that several wells have water quality issues, which resulted in CWS shutting down three wells in Zone 155 due to MTBE contamination. It is unrealistic and overly optimistic that CWS would propose a new

[249] D.14-08-011, Exhibit A, Chapter 32 - Salinas District Plant, Page 323 lines 19-24 regarding PIDs 64095 and 64177

[250] CWS Response to ORA Data Request A1507015- SN2-021, Question 1.i.a: Attachment SN2-021 Feasibility Study – CONFIDENTIAL.pdf, page 3 of 11, Conclusions and Recommendations: number (2).

well in this area without considering the potential of encountering water quality issues and not factoring in treatment cost in its cost analysis.

iv. CWS's cost analysis neglects to consider other necessary costs.

CWS provided a payback analysis between the costs for continued treatment of existing wells versus replacing them with a new well.[251] The analysis is based on the 2014 annual treatment costs for the three existing wells for $406,534 in 2014, which is more than what is shown in its project justification.[252] Based on this treatment cost, CWS estimates the payback for a new well to be seven years.

CWS's estimate only includes the well construction cost of $3,050,000,[253] and neglects to account for other necessary costs such as land purchase for the well site (PID 101336 for $601,237), necessary pipelines and/or booster pump(s) to connect the new well to the existing distribution system[254] and possible treatment as discussed above. Therefore, the cost comparison understates the cost of the water from a new well, is not representative of the actual operating costs, and should be disregarded.

In sum, CWS has sufficient supply without the capacity from the three impacted wells. CWS fails to consider a less costly option of blending water at Station 47 to augment its supply with an additional 800 gpm. CWS has not demonstrated that the new well project

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[251] CWS Response to ORA Data Request A1507015- SN2-010, Question 1e.

[252] Ibid, Question 1e. Note that CWS used the 2014 nitrate treatment cost, instead of the number in its project justification report of $324,000 per year.

[253] CWS Response to ORA Data Request A1507015- SN2-010 Q. 1 e.

[254] CWS Project Justification Report, page SLN PJ-354, lines 12-13. PID 101336 (land for new Zone 155 Well) justification includes discussion of "building a pump station at a future date."

is a cost effective solution. It has failed to provide a valid cost analysis with realistic assumptions (e.g., realistic assessment of need for well water treatment). Therefore, ORA recommends the Commission deny the land purchase and the new well projects in Zone 155.

e. 150,000-Gallon Tank at Station 70 (PID 97512) in 2017 and Well Replacement at Station 72 (PID 98414) in 2017 in Buena Vista System

In the Buena Vista System, CWS proposes to construct a 150,000-gallon tank at Station 70 in 2017 for $787,111[255] and to construct a well at Station 72 in 2018 for $2,334,052.[256] There are four primary pressure zones (535, 405, 695 and 3) in the Buena Vista system. According to CWS, a 150,000-gallon tank is needed to meet storage requirements in Zone 405, [257] and a new 300 gpm well is needed to address a supply deficit of 105 gpm in Zone 535.[258] These two projects should be denied as explained below.

150,000-Gallon Tank at Station 70 (PID 97512):

In the 2009 GRC (A0907001), CWS proposed to construct booster pumps and storage tanks for approximately 170 customers in Buena Vista under seven separate PIDs.[259] Most notably, PID 23267 was proposed to construct two 150,000-gallons storage tanks in

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[255] CWS Project Justification Report, page SLN PJ-276, lines 12-13.

[256] Ibid, page SLN PJ-374, lines 12-13.

[257] Ibid, page SLN PJ-277, lines 48-61.

[258] Ibid, page SLN PJ-375, lines 54-57.

[259] A0907001. Settlement of California Water Service Company (U-60-W), the Division of Ratepayers Advocates, Mr. Jeffrey Young, Mr. Jack Chacanaca, and the Leona Valley Town Council filed on September 3, 2010, pages 349 to 360 list PIDs 25669, 23267, 23128, 23147, 23187, 25407, and 23250.

Buena Vista.[260] D.10-12-017 authorized PID 23267 for an amount of $1.7 million to "construct tanks" with AL recovery.[261]

In the 2012 GRC (A1207007), CWS once again proposed to construct the same facilities in Buena Vista with five booster pumps at Station 73 (PID 64510) and a 120,000-gallon storage tank at Station 70 (PID 64487). ORA pointed out that D.10-12-017 authorized CWS to construct these plant projects under PIDs 23267 and 69429.[262] Subsequently, in D.14-08-011, the Commission adopted a Settlement Agreement (Exhibit A to D) between ORA and CWS whereby CWS agreed to cancel PIDs 64487 and 64510, as described below:[263]

[260] A0907001 Settlement Agreement, page 353, lines 1 to 12.

[261] D.10-12-017, Section 7.5.20 Salinas District, Page 24.

[262] A1207007 DRA RO Report, CWS Salinas District, pages 7-35 to 7-37.

[263] D1408011, Exhibit A – Settlement Agreement, Chapter 32: Salinas District Plant, Section D. Advice Letter Projects, page 326, lines 7 to 20.

Projects 23267 & 69429 – 150K-Gallon Storage Tanks & Pumping Equipment at Stations 70 and 73

ISSUE: In the 2009 GRC, Cal Water proposed to construct tanks and booster pumps to address the lack of pressure in the Buena Vista System, specifically for the five residences on Trimble Lane. The 2009 GRC Settlement Agreement between Cal Water and ORA reflected a $1.7 million project to address the issues identified in the Buena Vista System, but Cal Water has not completed these projects. In this GRC, Cal Water once again proposed to construct the same infrastructure that the company has previously requested.

RESOLUTION: Cal Water and ORA agreed that the company should complete the proposed projects under previously authorized Advice Letter Projects 23267 and 69429 with a combined budget of $1,700,200 ($1,190,200 for Project 23267 and $510,000 for Project 69429). In addition, Cal Water agrees to cancel its request for Projects 64487 and 64510.

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This is the third consecutive GRC that CWS is proposing to construct the same 150,000-gallons storage tank at Station 70. CWS has constructed one 170,000-gallon storage tank (Tank 1) at Station 70 under PID 69429.[264] A second tank (Tank 2) proposed in Buena Vista at Station 70 is planned for construction by the third quarter of 2016 under PID 97512.[265]

Consistent with ORA's recommendation for PID 64487 (Storage Tank at Station 70) in A1207007 and the Settlement Agreement in D1408011, ORA again recommends that CWS pursue the construction of this storage under PID 23267, authorized by D.10-12-017 for the construction of tanks. Therefore, ORA recommends that the Commission

[264] CWS Result of Operation Report for Salinas District, page 34 and information provided via email by CWS' Kitty Wong to ORA's Susana Nasserie on January 29, 2016 [3:58 PM].

[265] Email from CWS' Kitty Wong to ORA's Susana Nasserie [January 29, 2016 at 3:58 PM].

deny CWS's request for funding to construct a second tank at Station 70 under PID 97512 and direct CWS to recover the cost of the second tank via AL capped at $1,190,200[266] for PID 23267.

Well Replacement at Station 72 (PID 98414) in 2017:

CWS proposes to construct a well at Station 72 to supply water to the Buena Vista System, because it claims that the only source of supply for the Buena Vista System is a well located at Station 71.[267] CWS further states:

> Water supply capacity analysis (Attachment C) conducted for the system indicated a supply deficit of 105 gallons per minute (GPM) in the mid-zone of the system on a maximum day. Also, the new well is required for reliability of supply in case the only supply source at Station 71 requires maintenance.[268] [Emphasis added]

CWS has provided inaccurate information on the available sources of supply in the Buena Vista System. Well 71-01 at Station 71 is not the only source of supply in the Buena Vista System; Buena Vista is part of the Salinas Hills Water System, which is supplied with nine wells.[269] In 2007, CWS constructed a pipeline to connect the Indian Springs and Buena Vista water systems with the Salinas Hills System.[270] On April 8, 2008, CWS submitted an application to the DDW (formerly CDPH) to amend its domestic water supply permit to consolidate the Buena Vista water system with the

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[266] D1408011, Exhibit A – Settlement Agreement, Chapter 32: Salinas District Plant, Section D. Advice Letter Projects, page 326, lines 7 to 20.

[267] CWS Project Justification Report, page SLN PJ-375, lines 54-55.

[268] Ibid, page SLN PJ-375, lines 54-55.

[269] DDW's 2015 Sanitary Survey Report for CWS - Salinas Hills System, page 2 of 13, Table 4: List of Sources.

[270] CWS 2012 GRC Project Justification Report for Salinas District, page 175, lines 32-33.

Salinas Hills system.[271] In 2013, the DDW issued a permit amendment to consolidate the Indian Springs and Buena Vista water system with Salinas Hills.[272] Well 71-01 is included in the list of sources of supply for the Salinas Hills System and the wells in Salinas Hills do supply the Buena Vista System.[273] Therefore, the Buena Vista System is no longer a stand-alone system and Well 71-01 is not the only source of supply for Buena Vista. The information provided does not reflect the supply scenario in Buena Vista to justify a need for an additional well in the Buena Vista system which will add approximately $2 million to rate base. DDW's 2015 Sanitary Survey Report states that the Salinas Hills System has an estimated source capacity of 6.42 MGD, which comes from nine wells and "is able to meet the MDD (3.34 MGD) with source capacity alone (6.42 MGD)."[274] Since Buena Vista is now a part of the Salinas Hills system, there is by extension no supply deficiency in the Buena Vista system. Therefore, ORA recommends the Commission deny CWS's request for a new well at Station 72.

[271] CWS Response to ORA Data Request A1507015- SN2-020, Attachment SN2-020 (a) Consolidation Perm CDPH.pdf - Buena Vista Consolidation Permit Amendment issued by DDW (formerly CDPH) on April 24, 2013,

[272] DDW's 2015 Sanitary Survey Report for CWS - Salinas Hills System, page 1 of 13, Table 1: Permit Summary.

[273] CWS Response to ORA Data Request A1507015- SN2-020, Attachment SN2-020 (a) Consolidation Perm CDPH.pdf – Cal Water Salinas Hills – Buena Vista Consolidation Engineering Report, April 2013, page 2.

[274] DDW's 2015 Sanitary Survey Report for CWS – Salinas Hills System, page 2 of 13, Section B.2. Source Capacity Evaluation.

f. Storage/Dump Facility at Station 41 for $724,599 in 2016 (PID 98022)

CWS proposes to construct a storage/dump facility at Station 41 in 2016 for $724,599.[275] The project entails the construction of a catch basin to dispose of spoils/waste from leak vacuum trucks and material storage bins.[276]

CWS claims that the Salinas District does not have a dedicated location to dispose of its leak spoils/waste.[277] Currently, the spoils are disposed in a pit at Station 41. CWS explains that when the spoils pile up, the pit needs to be emptied by trucking and hauling the spoils to a waste facility. According to CWS, having a catch basin and storage bins at Station 41 will reduce the number of the hauling trips,[278] which in turn will reduce expenses for disposal services by an outside contractor.[279] CWS also indicates that this facility will meet National Pollutant Discharge Elimination System (NPDES) and Best Management Practice (BMP) compliance.[280]

ORA recommends that the Commission deny this project for two reasons: First, CWS's current disposal practice is in compliance with the NPDES and BMPs. Although CWS was fined in 2008 and 2009 for violating the NPDES permit, CWS has been able to

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[275] CWS Project Justification Report, page SLN PJ-404, lines 12-13.

[276] Ibid, page SLN PJ-404, lines 12-13.

[277] Leak spoils/waste is waste that is collected from streets during leak or service repairs by CWS's leak and vacuum trucks.

[278] CWS Project Justification Report, Page SLN-PJ 404, lines 20 to 22.

[279] Ibid, Page SLN-PJ 404, lines 34 to 35 and CWS Response to ORA Data Request A1507015- SN2-008 Question 1.b.

[280] Ibid, page SLN PJ-404, lines 13-15.

operate in the most recent six years (2010 to 2015) without further violations.[281] Second, the proposed project does not provide the cost savings that CWS claimed. CWS claims that the proposed facility will reduce expenses associated with disposal hauling. In 2014 and 2015, there were five hauling trips with a total expense of $17,779,[282] which is equivalent to an average of $8,900 per year ($17,779/2). Because CWS states that the proposed facilities would only reduce the number of disposal trips, their existence would only reduce but not eliminate all of the disposal expenses. The revenue requirement for the cost to construct a disposal site at Station 41 is approximately $109,000 in the first year.[283] Assuming that the disposal hauling expenses can be reduced to only 1/3 of recent, annual average (2014-2015) expense, the expected annual savings would only be $6,000,[284] far less than the increase in annual revenue requirement resulting from this proposed project ($109,000 for the first year). This is not a cost-effective project and should be rejected.

g. Country Meadows Interconnection with Salinas System for $2,976,479 in 2018 (PID 98607)

CWS proposes to install an interconnection pipeline between Country Meadows and Salinas system in 2018 for $2,976,479.[285] The project consists of installing 8,500 feet of 8-inch Ductile Iron (DI) pipe on Harrison Road from the intersection of Easy Street to

[281] CWS Response to ORA Data Request A1507015- SN2-008 Question 1.f .

[282] CWS Response to ORA Data Request A1507015- SN2-008 Question 1.b.

[283] CWS Response to ORA Data Request A1507015- SN2-008 Question 1.b.

[284] 66.6% times $8,900.

[285] CWS Project Justification Report, page SLN PJ-389.

Country Meadows Street.[286] The project also includes installing two booster pumps at Station 106 in Zone 280 in the Salinas System (lower elevation) to pump water to Country Meadows System (higher elevation). Although there is 315 gpm of available supply from two existing wells at Station 60 (110 gpm) and Station 61 (205 gpm),[287] CWS claims that the system would not be able to meet the MDD of 190 gpm or PHD of 300 gpm if one or both of the wells are not available.[288, 289] As explained below, CWS's Country Meadows system does not have a supply deficiency problem and does not need to construct a $3 million pipeline.

CWS's Discount of Supply from the Well is Unreasonable

Neither the Commission's GO 103-A nor Title 22 of the California Code of Regulations on drinking water standards (California Waterworks Standards) require that capacity from a well in a water system be discounted when determining supply availability. GO 103-A's general requirement regarding "Standards of Service" is that "[e]ach water utility shall ensure that it complies with the Departments' permit requirements and all applicable drinking water regulations."[290] With regards to capacity requirements, GO

[286] CWS Project Justification Report, Page SLN-PJ 387, lines 12 to 13. Note that this page is not marked as confidential.

[287] CWS Project Justification Report, Page SLN-PJ 387, lines 22 to 23. The information of the well capacity is different than the ones that CWS reported in the April 24, 2015 Monterey County Department of Health for Country Meadows Water System (No. 270-129) Inspection Report, Page 1 of 3, stated that the well 60-01 capacity at Sta. 60 is 170 gpm and the well 61-01 capacity at Sta. 61is 266 gpm, totaling a capacity of 436 gpm.

[288] Ibid, Page SLN-PJ 387, lines 24 to 25 and SLN-PJ 388, line 55.

[289] Ibid, Page SLN-PJ 387, lines 22 to 23.

[290] GO 103-A, Section II.1.B.

103-A refers specifically to "the Waterworks Standards, CCR Title 22, Section 64554."[291] GO 103-A, Section II.B.3.a states:

> 3) Potable Water System Capacity
>
> (a) A system's facilities shall have the capacity to meet the source capacity requirements as defined in the Waterworks Standards, CCR Title 22, Section 64554, or its successor. If, at any time, the system does not have this capacity, the utility shall request a service connection moratorium until such time as it can demonstrate the source capacity has been increased to meet system requirements.[292]

Therefore, in determining a system's available supply capacity, ORA relies on the California Waterworks Standards (CCR Title 22). For existing systems such as Country Meadows, there is simply no requirement to remove any source of supply capacity when evaluating available supply capacity to meet system demands. Therefore, CWS's election to discount a source of supply when evaluating system capacity understates available supply and is inappropriate.

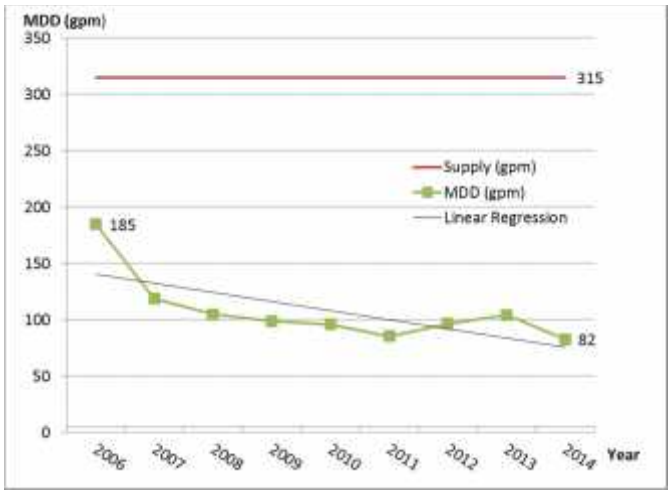
CWS overstates the demand in Country Meadows

Figure 5-C below shows the MDD and available supply capacity in the Country Meadows System between 2006 and 2014.

[291] GO 103-A, Section II.2.B.3.a.

[292] GO 103-A, Section II.2.B.3.a.

Figure 5-C: Supply and Recorded MDD[293] in Country Meadows System



The MDD used in CWS's supply-demand analysis is from 2006.[294] CWS failed to note that demand has decreased significantly since then. CWS's MDD is outdated and does not reflect the significant downward trend in consumption due to the implementation of conservation programs and the recent drought mandates to reduce consumption. In 2014, the MDD of the system has declined to 82 gpm, or approximately 44%[295] of the 2006 level. The highest MDD since 2006 occurred in 2013, at only 104 gpm, and can serve as an approximation of the expected demand in the supply-demand analysis. This 104 gpm MDD can be met by the smallest existing well (110 gpm capacity) at Station 60. As

[293] CWS did not provide MDD for 2014 in the Country Meadows System. ORA calculated the 2014 MDD by applying the 2013 MDD/ADD ratio peaking factor (pf) of1.887 that provided in its response to ORA Data Request A1507015- SN2-003, Q.1. See Attachment SN2-003 Q1.xlsx Tab Salinas for Country Meadows water system, ORA calculated 2013 MDD/ADD ratio 0.15/0.08 = 1.887. Therefore, the 2014 MDD= pf x 2014 ADD = 1.887x 0.063 MGD = 0.12 MGD = 82 gpm. The data of 2005 to 2013 ADD, MDD, PHD and 2014 ADD for Country Meadow is available from CSW's response to ORA Data Request SN2-003, Q.1.ORA converted the 2005 to 2013 MDD data from MGD to gpm.

[294] CWS used the 2006 MDD of 190 gpm in its Project Justification Report, while its Response to ORA Data Request A1507015- SN2-003 Attachment SN2-001 Q1 shows an MDD of 0.266 MGD (185 gpm).

[295] 2014 MDD/2006 MDD=82/185= 0.443 = 44%.

discussed above, CWS is not required to discount well capacity when determining supply adequacy; ORA only notes that the system has sufficient supply to meet expected demand even with one well out of service.

CWS's evaluation of the PHD scenario is flawed. CWS claims that the available supply cannot meet the PHD of 300 gpm when one of the wells is out of service.[296] There is no supply deficiency to meet the PHD. As discussed in Zone 155 projects (PIDs 101336 and PID 101331), Section 64554 of the CCR Title 22 requires water systems to have the capacity to meet 4 hours of PHD with source capacity, storage capacity, and/or emergency connections. The source capacity of 315 alone is able to provide for the PHD of 300 gpm. Moreover, there is 100,000 gallons of storage capacity[297] to meet the required 4 hours of PHD (72,000 gallons).[298] Although, Title 22 does not require discounting source of supply, ORA evaluated CWS's claims. Even with the largest well out of service, there is enough capacity to meet 4 hours of PHD as required under Title 22. The well can provide 110 gpm of the PHD and the remaining 190 gpm is met with storage capacity. The required storage is 45,600 gallons,[299] which is below the available storage of the system.

In sum, CWS's claimed supply deficiency in the Country Meadows System relies on an inflated MDD that is not representative of recent or expected demand, and inappropriately discounted available supply. There is no MDD or PHD deficit in this system. As shown in **Figure 5-C** above, the existing supply in the Country Meadows

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[296] CWS Project Justification Report, Page SLN-PJ 387, lines 22 to 23.

[297] CWS's Report on the Results of Operation for the Salinas District, page 20. See Storage Facilities – Scheduled 2 for Country Meadows system.

[298] 4 hours of PHD = 300 gpm x 4 hours x 60 minutes = 72,000 gallons.

[299] 4 hours of PHD = 190 gpm x 4 hours x 60 minutes = 45,600 gallons.

System exceeds current and expected demand. There is no need to increase supply to this system. Therefore, ORA recommends the Commission deny CWS's request to construct a pipeline and two boosters to provide additional supply to the Country Meadows System.

h. Small and Large Meter Replacement Program (SLN09000)

Table 5-G below lists CWS's request and ORA's recommendation on small and large meter replacement budgets for the Salinas District. ORA's recommended budgets are based on detailed analysis and recommendation in its Report on Plant-Common Issues.

Table 5-G: Meter Replacement Budgets – Salinas District

District:	Salinas		
YEAR	PID	ORA's Recommendation	CWS's Proposal
2016	0900	$ 46,825	$ 370,001
2017	0900	$ 47,931	$ 379,252
2018	0900	$ 49,023	$ 388,733
Total		$ 143,779	$ 1,137,986

i. Pump Replacements Projects for $667,421 in 2016, 2017 and 2018

CWS proposes 11 pump and motor replacement projects in 2016, 2017 and 2018 for a total budget of $667,421. CWS asserts the replacement pumps are needed for efficiency improvements.[300] Table 5-H shows ORA's recommendation and CWS's proposed budget and pump efficiency rating data.

[300] CWS's electronic Workpapers: Excel spreadsheet (Salinas Discovery 2015.xlsx)

Table 5-H: Pump Replacement Budgets - Salinas District[301]

Year	Project ID	Project Description	Overall Plant Efficiency	CWS - Efficiency Rating	ORA's Recommendation	CWS's Proposal
2016	00097815	Replacement of pump and motor at Sta. 16-B	37.19	VERY LOW	$ 67,092	$ 67,092
2016	00097816	Replacement of pump and motor at Sta. 16-C	67.25	VERY GOOD	$ -	$ 67,092
2016	00097817	Replacement of pump and motor at Sta. 16-D	39.71	VERY LOW	$ 67,092	$ 67,092
2016	00097818	Replacement of pump and motor at Sta. 47-B	51.7	LOW	$ 67,092	$ 67,092
2016	00097819	Replacement of pump and motor at Sta. 302-A	40.86	LOW	$ 52,607	$ 52,607
2017	00097820	Replacement of pump and motor at Sta. 302-B	37.22	LOW	$ 53,922	$ 53,922
2017	00097821	Replacement of pump and motor at Sta. 304-A	27.35	VERY LOW	$ 49,449	$ 49,449
2017	00097823	Replacement of pump and motor at Sta. 304-B	26.25	VERY LOW	$ 49,449	$ 49,449
2017	00097824	Replacement of pump and motor at Sta. 61-01	54.8	FAIR	$ -	$ 63,485
2018	00097826	Replacement of pump and motor at Sta. 16-01	47.36	LOW	$ 65,072	$ 65,072
2018	00097827	Replacement of pump and motor at Sta. 201-01	52.8	FAIR	$ -	$ 65,072
				Total	$ 471,773	$ 667,421

Pumps and motors should only be replaced when efficiency test results justify the need of replacement. In ORA's Report on Plant – Common Issues, ORA presents CWS's and ORA's pump and motor replacement approaches and proposals.

In response to ORA's data request, CWS provided pump efficiency test results from 2011 to 2014 for each pump in the district.[302] Based on the available pump test result data, ORA's recommends replacement of seven pumps with Low and Very Low ratings, as shown in Table 5-H above.

[301] CWS Response to ORA Data Request A1507015- DG-024. See Excel spreadsheet Attachment DG-024-2-a (MDR II F 8 Pump Efficiency).xlsx where CWS provided Plant Efficiency and Efficiency Rating for these pumps. Also CWS provided information of station numbers (Attachment DG-024.1-a.xlsx).

[302] CWS Response to ORA Data Request A1507015- DG-024. See Excel spreadsheet Attachment DG-024-2-a (MDR II F 8 Pump Efficiency).xlsx.

j. Replace SCADA Software and Hardware (PID 99176) for $ 786,296 in 2018

CWS proposes to replace SCADA software and hardware in 2018 for $786,296. For the reasons presented ORA's Report on Plant- Common Issues, ORA recommends disallowing this project.

k. Vehicle Replacements in 2016, 2017 and 2018 (PIDs 99238, 99240, and 99242) for $411,167

CWS proposes eight vehicle replacements in the Salinas District in 2016, 2017 and 2018 for a total budget of $411,167. For the reasons presented in ORA's Report on Plant-Common Issues, ORA recommends the following adjustments to CWS's vehicle replacement requests.

Table 5-I: Vehicle Replacements – Salinas District

Project ID	Vehicle ID	Year/Make/Model	CWS Proposed Replacement Year	ORA Recommended Replacement Period	ORA Recommendation	CWS Request
99238	V204090	2004 DODGE RAM 1500	2016	2016	$ 41,521	$ 41,521
99238	V208023	2008 DODGE RAM 2500	2016	2017	$ 46,984	$ 46,984
99240	V205076	2005 DODGE 2500 RAM ST	2017	2019	$ 48,159	$ 48,159
99240	V206020	2006 FORD F-550	2017	next GRC	$ -	$ 89,597
99240	V206031	2006 CHEVROLET 1500 SILVERADO SB	2017	2017	$ 42,559	$ 42,559
99242	V208022	2008 DODGE RAM 2500	2018	next GRC	$ -	$ 49,363
99242	V208101	2008 DODGE RAM 2500	2018	next GRC	$ -	$ 49,363
99242	V208137	2008 CHEVROLET SILVERADO 1500	2018	2018	$ 43,623	$ 43,623
		Total			$ 222,845	$ 411,167

l. Replace Flow Meters and Vaults at -11 Stations for $334,262 in 2016, 2017 and 2018 (PID 98926)

CWS proposes to replace flow meters and associated vaults at 11 stations: 5, 16, 23, 27, 29, 38, 40, 44, 108, 201 and 203 for $334,262 in 2016, 2017, and 2018.[303] CWS stated that the existing flowmeters at these stations contain mechanical components that are worn and need to be replaced.[304] CWS also explained that these flowmeters do not meet current National Sanitation Foundation (NSF) testing and certification standards.[305] However, this is not a requirement for flow meters installed before March 2008.[306]

For the reasons presented in ORA's Report on Plant-Common Issues, and ORA's analysis below, ORA recommends disallowing CWS's requests in its entirety, as shown in **Table 5-J** below.

[303] CWS Project Justification Report, Pages SLN PJ-294 to 295, and CWS Response to ORA Data Request A1507015- SN2-012, Q.2.iiii, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xls

[304] CWS Project Justification Report, Page SLN PJ-294, Lines 23-24

[305] Ibid, Page SLN PJ-294, Lines 24-25.

[306] CWS Response to ORA Data Request A1507015- A1507015-SN2-012 question No. 2-d. iii.

Table 5-J: Flow Meter Replacements – Salinas District[307]

YEAR	PID	Description	ORA's Recommendation	CWS's Proposal
2016	00098926	Replace 4 flow meters in new vaults at Stations: 16, 108, 201, and 203	$ -	$ 180,706
2017	00098929	Replace 3 flow meters in new vaults at Stations. 29, 38, 44	$ -	$ 65,282
2018	00098930	Replace 4 flow meters in new vaults at Stations. 5, 23, 27 and 40	$ -	$ 88,273
Total			$ -	$ 334,262

CWS's maintenance and repair records for the above-listed stations do not indicate long-standing mechanical failures as described by CWS's project justification. As a matter of fact, the records indicate that CWS performed regular maintenance and calibration activities at the flowmeters and CWS was able to resolve most mechanical problems exhibited.[308]

In addition, CWS proposes to replace the same number of four flow meters in years 2016 and 2018, and the annual replacement cost between 2016 and 2018 varies by 105%.[309] CWS did not provide any explanation for the large cost difference and the reasonableness of the flow meters budget. Without any explanation of CWS's 2016 to 2018 cost inconsistence, ORA cannot verify the reasonableness of these costs.

[307] In CWS PJ Report, page SLN PJ-10, PID 98929, CWS requests for two flow meters in 2017, while in its response to ORA data request, CWS requests for three flow meters. (See CWS Response to ORA Data Request A1507015- SN2-012, Q.2.iii, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xlsx)

[308] CWS Response to ORA Data Request A1507015- SN2-012, Q.2.d.i, Attachment A1507015-SN2-012_q_-e-1.xlsx for Salinas District.

[309] 100%*(($180,706/$88,273)-1)=104.7~105%

In sum, ORA recommends that the Commission deny CWS's proposal to replace flow meters because CWS has not presented any evidence to show that the meters conditions warrant replacement and the costs are accurate.

m. Automated Meter Reading for $141,882 in 2016 in Buena Vista System (PID 98193)

CWS proposes a budget of $141,882 for the installation of 185 AMR meters in the Buena Vista System. CWS states that installing AMR meters will reduce the amount of meter reading time in this rural, mountainous area. The required investment of $767/meter is highly unreasonable, with little apparent savings to the Salinas District's ratepayers. For this reason and the additional reasons presented in ORA's AMR/AMI testimony (see ORA's Report on Plant –Common Issues), ORA recommends that the Commission disallows this project.

n. Replace Generator at 4 Stations for $851,600 in 2016, 2017, and 2018 (PIDs 98634, 99329, 98209 and 98241)

CWS requests $851,600 for the replacement of 4 generators and associated transfer switches for Station 25 and Station 30 in 2016, Station 29 in 2017, and Station 33 in 2018. According to CWS, the generators at these stations are old, run poorly, the engines occasionally fail, oil leaks occur, parts are difficult to obtain or no longer available, and the maintenance costs are increasing.[310] **Table 5-K** summarizes CWS's requested generator replacements in the Salinas District.

[310] CWS Project Justification Report, pages SLN PJ – 238 to 248 and SLN PJ – 290 to 294.

Table 5-K: Generator Replacements - Salinas District

Salinas District			ORA's Recommendation	CWS's Proposal
Year	Project ID	Project Description		
2016	98634	Replace the generator at Salinas Station 25	$0	$261,370
2016	99329	Replace the generator at Salinas Station 30	$0	$193,920
2017	98209	Replace the generator at Salinas Station 29	$0	$198,069
2018	98241	Replace the generator at Salinas Station 33	$0	$198,241
		Total	$0	$851,600

ORA's Report on Plant – Common Issues presents its analysis on CWS's budgets and ORA's general approach for generator installations. ORA also reviewed specific generator proposals for each system/zone. The Salina District consists of multiple pressure zones. In this GRC, CWS proposes to install generators in three zones (Zone 180, Zone 155 and Zone 320). CWS has a total of 16 permanent generators in those zones and another five portable generators in the district available for deployment to these zones.[311]

In response to ORA's data request, CWS provided engine logs from 2007 to 2014 and information for the existing generators that are located at the Stations 25, 29, 30, and 33.[312] Table 5-L provides an inventory of existing permanent generators and portable generators in the Zone 180, Zone 155 and Zone 320, and their utilization in the 2007-2014 periods.

[311] CWS Response to ORA Data Request A1507015- SN2-004, Q.1.e and Q.3.

[312] CWS Response to ORA Data Request A1507015- SN2-004, Q.1.a. See Attachment SN2-004 Q1 (a) run logs for Salinas District.

Table 5-L: Generator inventory and 2007-2014 generator utilization[313]

Zone	Station	2007 to 2014 average utilization rate (in hours/year)	2007 to 2014 average utilization rate (percentage/year)	Total Generators in the zone
180	25	1.8	0.02%	6
	29	5.6	0.06%	
155	30	2.2	0.03%	7
320	33	1.1	0.01%	3
Total permanent generators in the district				16
Portable generators from Salinas district available for deployment				5

The utilization rate is the number of usage in hours/year due to emergencies or power outages, excluding the testing hours.[314] As summarized on Table 5-L, the utilization of these generators was minimal and the rates are between 0.01% and 0.06% per year. The highest utilization rate was 0.06% from the generator at Station 29.

Although CWS claims that maintenance costs have been increasing, CWS did not present any evidence to substantiate this claim either in the filing or in response to ORA's data request for such information.[315] Instead, CWS conceded that records of annual expenditures for maintenance activities are not available.[316] Without any records of

[313] CWS Response to ORA Data Request A1507015- SN2-004, Q.1.a. See Attachment SN2-004 Q1 (a) run logs for Salinas District.

[314] CWS Response to ORA Data Request A1507015- SN2-004, Q.1.a. See Attachment SN2-004 Q1 (a) run logs for Salinas District.

[315] CWS Response to ORA Data Request A1507015- SN2-004, Q.1.d states: "No annual historical data is available summarizing the costs…"

[316] CWS Response to ORA Data Request A1507015- SN2-004, Q.1.d states: "No annual historical data is available summarizing the costs…"

maintenance cost, it is unclear how CWS was able to determine and claim that maintenance cost has been increasing.

Moreover, CWS's claims of mechanical failures associated with age and conditions of the generators warrant replacement. However, maintenance records do not indicate any long standing mechanical failures which warrant replacement.[317] The lack of usage in the Zones as well as the availability of five portable generators does not support a need to replace four permanent generators at a cost of $850,000. Therefore, ORA recommends the Commission deny CWS's request to replace generators.

[317] CWS Response to ORA Data Request A1507015- SN2-004, Q.1.d, Attachment SN2-004 Q.1(b).

o. Replace 15 Control Valves for $447,113 in 2016, 2017 and 2018 (PIDs 98603, 98602, 98673 and 98604)

CWS requests $447,113 for the replacement of 15 Control Valves under as shown on Table 5-M below. For the reasons presented in ORA's Report on Plant- Common Issues, ORA recommends the following adjustments to CWS's valve replacement requests.

Table 5-M: Valve Replacements - Salinas District

YEAR	PID	ORA's Recommendation	CWS's Proposal
2016	00098602	$ -	$ 58,532
2016	00098673	$ 117,065	$ 175,597
2017	00098603	$ 29,998	$ 89,994
2018	00098604	$ 61,496	$ 122,991
Total		$ 208,559	$ 447,114

p. Replace RTUs at 6 Stations for $157,790 (PID 98934) and Install RTU at Station 41 for $39,426 (PID 98932) in 2017

CWS requests $157,790 for the replacement of Remote Terminal Unit (RTU) at six stations and $39,426 for a new RTU installation at Station 41 in 2017.[318] For the reasons presented in ORA's Report on Plant – Common Issues, ORA recommends disallowing these two PIDs.

[318] CWS Project Justification Report, page SLN PJ-314 indicates the replacement will be completed in 2016. However, this year is different in its CWS's workpapers (Salinas Discovery 2015.xlxs TAB WP8B5a) which shows the project will start and be completed in 2017.

2. Non-Specific Budgets for 2016 to 2018

CWS requests $10,902,800 in the Non-Specific Budget to address unforeseen, unplanned, and emergency projects and regulatory compliant projects. ORA's Report on Plant - Common Issues presents ORA's recommended total disallowance of this budget.

3. 2015 Capital Budget

CWS requests approximately $14,888,119 for plant additions in 2015, which consist of projects authorized for 2015 in the last GRC and projects authorized from previous GRCs. ORA's Report on Plant - Common Issues presents its analysis and basis for adjusting the 2015 capital additions for Salinas.

D. CONCLUSION

ORA's recommendations presented above have been incorporated in the calculations for ORA's recommended Plant in Service as shown in Table 7-1 in Company-wide Report, Appendix RO.

Chapter 6: Plant – Selma District

A. INTRODUCTION

This chapter presents ORA's analyses and recommendations for Plant in Service for CWS's Selma District.

B. SUMMARY OF RECOMMENDATIONS

Based on ORA's review and analysis of CWS's requested plant additions, ORA recommends disallowance, adjustment, deferral, or Advice Letter treatment where appropriate. These recommendations form the basis of ORA's recommended capital budget summary presented in **Table 6-A** below. ORA's estimate plant additions also reflect recommendations in its Common Plant Issues testimony regarding Pipeline Replacement Program, Meter Replacement Program, Supervisory Control and Data Acquisition (SCADA) Replacements, and Vehicle Replacements. **Table 6-B** presents ORA project-specific adjustments.

Table 6-A: Capital Budget Summary – Selma District

Selma ($000)	2015	2016	2017	2018	Annual Average
ORA	$ 524.8	$ 862.4	$ 511.4	$ 296.4	$ 548.8
CWS	$ 1,222.9	$ 2,053.9	$ 1,295.4	$ 1,482.7	$ 1,513.7
CWS > ORA	$ 698.1	$ 1,191.5	$ 784.0	$ 1,186.3	$ 965.0
ORA as % of CWS	43%	42%	39%	20%	36%

Table 6-B: Capital Budget Details – Selma District

2015	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	62515	Replace Pump Equipment - Sta. 19-01	$ -	$ 72,186	$ 72,186	0%
	63799	223 Conversions of Flat Rate Services to Metered Services	$ 239,517	$ 165,379	$ (74,138)	145%
	64135	Field - Handheld Meter Reading Radios ITRONS FC3000- ***Cancelled***	$ -	$ -	$ -	0%
	64933	Vehicle - 0.5 Ton Pick Up & Accessories	$ -	$ 62,934	$ 62,934	0%
	SEL0900	Meter Replacement Program	$ -	$ 24,936	$ 24,936	0%
Specifics Total			**$ 239,517**	**$ 325,435**	**$ 85,918**	**74%**
Non-Specifics Total			**$ 42,750**	**$ 189,600**	**$ 146,850**	**23%**
Carry-Overs Total			**$ 242,571**	**$ 707,860**	**$ 465,289**	**34%**
TOTAL 2015			**$ 524,838**	**$ 1,222,895**	**$ 698,057**	**43%**

2016	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	98171	Hydrant Meter Reduced Pressure Principal Assembly	$ 13,768	$ 13,768	$ -	100%
	98636	Two uncased 8"diameter pipelines under Railroads at E. Dinuba Ave and Third St.	$ -	$ 471,310	$ 471,310	0%
	98923	Install or Replace Flow meter. Connect to SCADA	$ -	$ 38,490	$ 38,490	0%
	99245	Vehicle Replacements > 120,000 miles	$ 41,521	$ 41,521	$ -	100%
	99526	250 Conversions of Flat Rate Services to Metered Services per State Mandate	$ 174,685	$ 174,685	$ -	100%
	99528	250 Conversions of Flat Rate Services to Metered Services-State Mandated	$ 174,685	$ 174,685	$ -	100%
	99531	250 Conversions of Flat Rate Services to Metered Services- State Mandated	$ 174,685	$ 174,685	$ -	100%
	117MRP16	The 2016 main replacement program will replace 2,270 feet of pipelines in the Selma district at an estimated cost of $207 per foot.	$ 268,286	$ 700,529	$ 432,243	38%
	SEL0900	Meter Replacement Program	$ 14,808	$ 38,154	$ 23,346	39%
Specifics Total			**$ 862,438**	**$ 1,827,827**	**$ 965,389**	**47%**
Non-Specifics Total			**$ -**	**$ 226,100**	**$ 226,100**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2016			**$ 862,438**	**$ 2,053,927**	**$ 1,191,489**	**42%**

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2017	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	98919	Install or Replace Flow meter. Connect to SCADA	$ -	$ 19,170	$ 19,170	0%
	98924	Install Well level Transducers at Stations 7,13,16	$ -	$ 33,041	$ 33,041	0%
	98925	Add new well level Transducers at Stations 17, 19, 20	$ -	$ 33,041	$ 33,041	0%
	99248	Vehicle Replacements > 120,000 miles	$ 42,559	$ 42,559	$ -	100%
	102727	250 Conversions of Flat Rate Services to Metered Services-State Mandated	$ 179,052	$ 179,052	$ -	100%
	117MRP17	The 2017 main replacement program will replace 2,270 feet of pipelines in the Selma district at an estimated cost of $207 per foot.	$ 274,617	$ 718,042	$ 443,425	38%
	SEL0900	Meter Replacement Program	$ 15,158	$ 39,107	$ 23,949	39%
Specifics Total			**$ 511,386**	**$ 1,064,012**	**$ 552,626**	**48%**
Non-Specifics Total			**$ -**	**$ 231,400**	**$ 231,400**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2017			**$ 511,386**	**$ 1,295,412**	**$ 784,026**	**39%**

2018	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	98647	VFD Installation for station19	$ -	$ 97,559	$ 97,559	0%
	99177	Replace the SCADA system server and software. This is a the district portion of a combined project to replace all of the SCADA system software and hardware throughout Cal Water.	$ -	$ 372,491	$ 372,491	0%
	117MRP18	The 2018 main replacement program will replace 2,270 feet of pipelines in the Selma district at an estimated cost of $207 per foot.	$ 280,878	$ 735,994	$ 455,116	38%
	SEL0900	Meter Replacement Program	$ 15,503	$ 40,085	$ 24,582	39%
Specifics Total			**$ 296,381**	**$ 1,246,129**	**$ 949,748**	**24%**
Non-Specifics Total			**$ -**	**$ 236,600**	**$ 236,600**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2018			**$ 296,381**	**$ 1,482,729**	**$ 1,186,348**	**20%**

C. DISCUSSION

The Selma District recorded $1,291,117 in annual average gross plant additions for the most recent six-year period 2009-2014.[319] Table 6-C compares CWS's and ORA's estimates against recorded annual average gross plant additions.

[319] Gross plant additions include company funded plant additions as well as contributions and advance deposits for specific plant.

Table 6-C: Capital Budget Proposals vs. Recorded Expenditures– Selma District

Selma ($000)	2015	2016	2017	2018	Annual Average	% of Recorded
2009-2014 Recorded	--	--	--	--	$ 1,291.1	100%
ORA	$ 524.8	$ 862.4	$ 511.4	$ 296.4	$ 548.8	43%
CWS	$ 1,222.9	$ 2,053.9	$ 1,295.4	$ 1,482.7	$ 1,513.7	117%

ORA presents its analyses and recommended adjustments to CWS's requested capital budget for specific projects (Section 1), 2016-2018 Non-Specific projects for 2016 to 2018 (Section 2), and 2015 budget (Section 3) below.

1. Specific Projects

In this GRC, CWS proposes $4,832,068 for specific projects in 2016 to 2018, which include Pipeline Replacement Program, Small and Large Meter Replacement Program, Flat to Meter Conversion, pipeline casing installation, SCADA software and hardware installation, Variable Frequency Drive (VFD) installation, flow meter replacements and well level transducers installations. The following are ORA's recommended disallowances and adjustments:

a. Pipeline Replacement Program

CWS requests approximately $2,154,565 to replace 6,810 feet of pipeline per year between 2016 and 2018. ORA evaluated the leak rate, water loss, system age, results of AWWA's recommended pipeline replacement model, historical replacement rate, and replacement cost for each district and provided a detailed evaluation of CWS's pipeline replacement proposal in ORA's Common Plant Issues Testimony (see ORA's Report on Plant – Common Issues). **Table 6-D** below shows ORA's recommendations for pipeline replacement and the associated budget in this district.

Table 6-D: Pipeline Replacement Program Budget – Selma District

YEAR	PID	ORA's Recommendation		CWS's Proposal	
		Length (ft)	Budget	Length (ft)	Budget
2016	00099909	863	$ 268,286	2,270	$ 700,529
2017	00099912	863	$ 274,617	2,270	$ 718,042
2018	00099913	863	$ 280,878	2,270	$ 735,994
	Total	2,588	$ 823,781	6,810	$ 2,154,565

b. Small and Large Meter Replacement Program

Table 6-E below lists CWS's request and ORA's recommendation on small and large meters in the Selma District. ORA's recommended budgets are based on detailed analysis and recommendation in its Report on Plant-Common Issues.

Table 6-E: Meter Replacement Program Budgets – Selma District

District:	Selma			
YEAR	PID	ORA's Recommendation		CWS's Proposal
2016	0900	$	14,808	$ 38,154
2017	0900	$	15,158	$ 39,107
2018	0900	$	15,503	$ 40,085

c. Replace SCADA Software and Hardware (PID 99177) for $372,491 in 2018

CWS proposes to replace SCADA software and hardware in 2018 for $372,491. For the reasons presented in ORA's Report on Plant – Common Issues, ORA recommends disallowing this project.

d. Install Casing for 8" Diameter Pipelines under Railroads (PID 98636) for $471,310 in 2016

CWS proposes to install 300 ft. of 24" casings for two 8" pipelines that run under the railroads for a budget of $471,310 in 2016. CWS states that the two currently uncased pipelines are aging and under risk of collapsing.[320] According to CWS, installing the casings would benefit customers as it avoids interrupting services and higher repair cost when they need to be repaired under emergency condition.[321]

CWS identified two locations at risk, at ***BEGIN CONFIDENTIAL*** [redacted] ***END CONFIDENTIAL*** and supports its request by including its location maps as well as past bidding documents.[322] However, CWS did not provide any supporting documentation regarding the current conditions of the pipelines such as a conditional assessment of the pipeline, a study, or leak history review to substantiate its claims that the pipelines are aging or showing signs of failure.

In the Project Justification Report, CWS explains four options that were considered. The first option is to do nothing. The second option is to insert pipe linings that according to CWS will reduce pipeline capacity. The third option is to move pipelines to other areas, and lastly the selected option is to replace the existing pipelines with new 8" pipelines and insert the pipelines within 24" steel casings. ORA does not contest the second option. However, with regards to the third option to move the pipelines to other areas, CWS claims that due to the pipes location and the system needs for the area, it is better

[320] CWS Project Justification Report, page SEL PJ –224, Lines 13-14.

[321] Ibid, page SEL PJ –225, Lines 54-55.

[322] Ibid, page SEL PJ –224, Lines 15-16, and page SEL PJ-227 to 232, CWS includes the bidding documentations and the maps.

to keep the pipelines at the current location.[323] CWS did not clearly explain and present any basis as to why relocating the pipelines was not selected. There is no analysis to compare the costs between relocating the pipelines and installing new pipeline with the casings, which could be a less expensive option. ORA's analysis found that it cost $311/ft.[324] to install new pipelines compared to $1,571/ft.[325] to install the casings with the new pipelines. CWS's option analysis lacks costs support and therefore, ORA cannot verify whether CWS's selected project is the most cost effective option.

In addition, CWS provided no evidence that the pipelines are at risk of collapsing. In DR SN2-14, ORA asked how CWS determined that due to aging, the pipelines are under risk of collapsing and whether CWS had performed any study. In its response, CWS explained that the company has not performed any study that indicates the pipes are collapsing[326] and CWS indicated that the pipelines had 2 leaks in 2005 and 2007.[327] However, CWS did not cite any disruptions of railroad operation or experience collapsing issues due to those 2 leak events. Based on past experiences, there is little indication that leaks in these pipelines would result in a "collapsing event." In addition, in the Project Justification Report, CWS did not explain or include any notice(s) from any authorities indicating that the company did not meet any railroad permitting or requirements requiring CWS to repair under railroad pipelines or install the pipeline casings.[328] It is

[323] CWS Project Justification Report, page SEL PJ –225, Lines 39-41.

[324] See Section 6.1 Specific Projects: a. Pipeline Replacement Program, ORA's analysis recommends the pipeline replacement of $311/ft.

[325] ORA's calculation: total project $471,310/300ft. = $1,571/ft.

[326] CWS Response to ORA Data Request SN2-014, Q.2.a.

[327] CWS Response to ORA Data Request SN2-014, Q.2.c.

[328] CWS Project Justification Report, page SEL PJ –224 to 225.

uncertain how CWS concluded on the limited available information that these pipelines are at risk of collapsing.

Based on the above findings, ORA asserts that CWS's request has insufficient justification and hence ORA cannot verify that the project is warranted. For this reason, ORA recommends the Commission deny the project at this time.

e. Replace Flow meters for $38,490 in 2016 (PID 98923) and for $19,170 in 2017 (PID 98919)

CWS proposes to replace flow meters at Station 4 for $38,490 in 2016 (PID 98923) and at Station 7 for $19,170 in 2017 (PID 98919).[329] For reasons presented in ORA's Report on Plant – Common Issues, ORA recommends disallowing both PIDs 98923 and 98919. .

At Station 4, CWS proposes to replace the flow meter and construct a vault. In DR Response SN2-012, CWS indicates that the flow meter was installed in 2001.[330] According to CWS's maintenance records, the flow meter at Station 4 was calibrated (a normal preventive measure) in August 2014 and 2015.[331] There are no indications of needed repairs or malfunctions that necessitate replacement. Also, since the flow meter is currently calibrated and has been functioning in its current location, there is no added benefit of constructing a vault to store the flow meter. Therefore, ORA recommends the Commission deny this project.

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[329] CWS Response to ORA Data Request SN2-012, Q.2.iiii, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xls and CWSs Project Justification Report, page SEL PJ –7.

[330] CWS Response to ORA Data Request SN2-012, Q.2.iiii, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xls show flowmeter project status and installation dates.

[331] CWS Response to ORA Data Request SN2-012, Excel spreadsheet attachment A1507015-SN2-012_q_e_1.xls show flowmeters maintenance records.

At Station 7, CWS proposes to replace the flow meter. In DR SN2-012, CWS indicated that the flow meter was installed in 1992.[332] However, CWS stated that the maintenance records are not available for this flow meter.[333] The lack of maintenance for this flow meter can indicate that the meter can function without the need for regular maintenance or that the meter has not been used. Without the maintenance information, ORA cannot verify the condition of this flow meter and hence cannot verify whether replacement is warranted. Therefore, ORA recommends the Commission deny this project.

f. Install Well Level Transducer at Stations: 7, 13, 16 (PID 98924) for $33,041 in 2017

CWS proposes to install well level transducers at Stations 7, 13, and 16 for $33,041 in 2017. In DR DG-024, CWS explains that currently a CWS employee takes well level readings once a month. However, CWS explains that monthly readings do not provide enough data points to be considered in identifying production trends. The well level transducers would allow for daily readings, which would better identify production trends.

ORA disagrees with the need for the project because according to CWS there is no requirement for the company to take well level readings daily. In addition, CWS explains that the cost associated with manual reading is approximately $65 per month or $780 per year.[334] In comparison, the annual revenue requirement associated with the well level

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[332] CWS Response to ORA Data Request SN2-012, Q.2.iii, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xls show flowmeter project status and installation dates.

[333] CWS Response to ORA Data Request SN2-012, Excel spreadsheet attachment A1507015-SN2-012_q_e_1.xls show flowmeters maintenance records.

[334] Email from James Polanco of CWS, to Daphne Goldberg of ORA (December 14, 2015, 4:06 PM) (on file with author).

transducer is $2,203.[335] This is nearly three times the current cost paid by ratepayers. There are no cost savings associated with this project, in fact there will be an increase in expenses of $2,203-$780= $1,423 per year. In fact, for three well transducers, there will be an increase in expenses of $4,269 per year.[336]

Based on the above information, the project is unnecessary and it is not a prudent investment. Therefore, ORA recommends the Commission deny this project.

g. Install Well Level Transducer at Stations: 17, 19, 20 (PID 98925) for $33,041 in 2017

CWS proposes to install well level transducers at Stations 17, 19, and 20 for $33,041 in 2017. For the same reasons ORA explained in the project (PID 98924) above, ORA recommends disallowing this project.

h. VFD Installation for Station 19 (PID 98647) for $97,559 in 2018

CWS proposes to install a variable frequency drive ("VFD") at Station 19, for $97,559 in 2018. [337]Upon ORA data requests, CWS included a project justification but no detailed cost estimate was provided.[338] In the justification, CWS claims that the system struggles to maintain consistent pressure during the low demand periods.[339] According to CWS, the demand in the system can be less than the output of a single well. Therefore, a VFD

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[335] ORA's calculation of the revenue requirement for 1 well transducer is approximately 20% x ($33,104/3)= $2,203

[336] The revenue requirement for 3 well transducers is approximately 3 x ($2,203-$780)=$4,269.

[337] CWS Project Justification Report, page SEL PJ – 7: B. Proposed Project List, project ID: 98647.

[338] CWS Response to ORA Data Request SN2-014, Q.1, file: Attachment SN2-014 Q1(a).pdf

[339] CWS Response to ORA Data Request SN2-014, Q.1, file: Attachment SN2-014 Q1(a).pdf.

at Station 19 is needed especially when one of the wells supply produces more than its demand and the Station 21 storage tank is full.[340] Currently, CWS staff throttles back one of the well pumps to avoid over supply and inconsistent pressures. By installing the VFD in the Station.19, the well production can be adjusted automatically to meet the low demand periods.

While installing the VFD in Station 19 sounds like a reasonable solution, ORA cannot verify if this approach is the most cost effective option. As mentioned above, CWS did not include the detailed project cost estimates. Therefore, it is unclear if the electrical panel to comply with the VFD is included in this project estimate or whether there will be an additional electrical panel upgrade project in the future to complete the installation in Station 19. In its justification, CWS also claims a Pressure Reducing Valve ("PRV") cost but it also did not present the analysis to compare the costs of VFD or PRV for ORA to verify the most cost effective option. In addition, CWS did not provide information of how often the CWS staff needs to perform the task to avoid the inconsistent pressure events during the low demand periods.

Table 6-F: Water Quality Complaints in Selma District[341]

	2012	2013	2014	3 Yr Total
AIR	0	0	0	0
DIRTY	0	0	0	0
NOISE	0	1	0	1
PRESSURE	1	0	0	1
SAND	1	2	0	3
TAST/ODR	0	0	0	0
Yearly Totals	**2**	**3**	**0**	

[340] CWS Response to ORA Data Request SN2-014, Q.1, file: Attachment SN2-014 Q1(a).pdf.

[341] CWS Response to Minimum Data Request (MDR) – Item H1 (electronic copy) Tab: WQ Complaints for Selma district.

However, as shown in the **Table 6-F** above, there was only one pressure issue in the last three years from 2012 to 2014. Based on just one pressure complaint in 3 years, there is no indication the district is having pressure problems. This is not prudent and not a cost effective investment if the VFD will not be used adequately.

Based on the above explanation, CWS provided insufficient justification for ORA to verify the needs of the project. For this reason, ORA recommends that the Commission deny the project.

2. Non-Specific Budgets for 2016 to 2018

CWS requests $694,100 in the Non-Specific Budget to address unforeseen, unplanned, and emergency projects and regulatory compliant projects. ORA's Report on Plant - Common Issues Testimony presents ORA's recommended total disallowance of this budget.

3. 2015 Capital Budget

CWS requests approximately $1,222,895 for plant additions in 2015, which consist of projects authorized for 2015 in the last GRC and projects authorized from previous GRCs. ORA's Report on Plant - Common Issues presents its analysis and recommended 2015 capital additions for Selma.

D. CONCLUSION

ORA's recommendations presented above have been incorporated in the calculations for estimated Plant in Service as shown in Table 7-1 in Company-wide Report, Appendix RO.

Chapter 7: Plant – Visalia District

A. INTRODUCTION

This chapter presents ORA's analyses and recommendations for Plant in Service for CWS's Visalia District.

B. SUMMARY OF RECOMMENDATIONS

Based on ORA' review and analysis of CWS's requested plant additions, ORA recommends disallowance, adjustment, deferral or Advice Letter treatment where appropriate. These recommendations form the basis of ORA's recommended capital budget summary presented in **Table 7-A** below. ORA's estimate plant additions also reflect recommendations in its Common Plant Issues testimony regarding Pipeline Replacement Program, Meter Replacement Program, Supervisory Control and Data Acquisition (SCADA) software and hardware installation, Flow Meter Replacements, Pump Replacements, Generator Replacements, Panel Board Replacements and Vehicle Replacements. **Table 7-B** presents ORA project-specific adjustments.

Table 7-A: Capital Budget Summary – Visalia District

Visalia ($000)	2015	2016	2017	2018	Annual Average
ORA	$ 1,870.5	$ 778.0	$ 930.5	$ 777.3	$ 1,089.1
CWS	$ 9,657.8	$ 5,308.5	$ 7,410.5	$ 8,073.1	$ 7,612.5
CWS > ORA	$ 7,787.2	$ 4,530.6	$ 6,480.0	$ 7,295.8	$ 6,523.4
ORA as % of CWS	19%	15%	13%	10%	14%

Table 7-B: Capital Budget Details – Visalia Valley District

2015	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00020998	Robin, Lark, & Orl. - 4,000' 8" PVC; 75 1" Services; 7 Hydrants	$ 458,310	$ 558,780	$ 100,470	82%
	00020998	Robin, Lark, & Orl. - 4,000' 8" PVC; 75 1" Services; 7 Hydrants	$ 293,265	$ 132,068	$ (161,198)	222%
	00020998	Robin, Lark, & Orl. - 4,000' 8" PVC; 75 1" Services; 7 Hydrants	$ 10,292	$ 24,653	$ 14,361	42%
	00062232	Replace Pump Equipment - Sta. 23-01	$ -	$ -	$ -	0%
	00062233	Replace Pump Equipment - Sta. 7-01	$ -	$ 80,106	$ 80,106	0%
	00062235	Replace Pump Equipment - Sta. 50-01	$ -	$ 80,706	$ 80,706	0%
	00062752	New Concrete Driveway - Sta. 23	$ 20,458	$ 9,005	$ (11,453)	227%
	00062812	Replace Chemical Dosing Pumps	$ -	$ 7,454	$ 7,454	0%
	00063635	Panelboard Replacement - Sta. 7	$ -	$ 174,077	$ 174,077	0%
	00063639	Panelboard Replacement - Sta. 91	$ -	$ 162,747	$ 162,747	0%
	00063901	Flowmeter Replacement - Sta. 50	$ -	$ 26,781	$ 26,781	0%
	00063912	Flowmeter Replacement - Sta. 53	$ -	$ 29,871	$ 29,871	0%
	00064937	Vehicle - 0.5 Ton Pick Up with Accessories - Serviceman	$ -	$ 42,000	$ 42,000	0%
	00064938	Vehicle - 0.5 Ton Pick Up with Accessories - Serviceman	$ -	$ 42,000	$ 42,000	0%
	VIS0900	Meter Replacement Program	$ -	$ 94,294	$ 94,294	0%
Specifics Total			**$ 782,324**	**$ 1,464,540**	**$ 682,215**	**53%**
Non-Specifics Total			**$ 340,481**	**$ 1,527,100**	**$ 1,186,619**	**22%**
Carry-Overs Total			**$ 747,720**	**$ 6,666,134**	**$ 5,918,414**	**11%**
TOTAL 2015			**$ 1,870,525**	**$ 9,657,774**	**$ 7,787,249**	**19%**

2016	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00097673	Upgrade CP system at Visalia 12-T2	$ 18,670	$ 18,670	$ -	100%
	00098017	Standby power system for scada to be installed	$ -	$ 117,643	$ 117,643	0%
	00098048	Replacement of 2 control valves in Visalia. 120_012_CV001 120_059_CV001	$ 58,532	$ 58,532	$ -	100%
	00098200	Hydrant Meter Reduced Pressure Principal Assembly	$ -	$ 96,374	$ 96,374	0%
	00098545	Install Back up Generator sta 37 Visalia	$ -	$ 253,756	$ 253,756	0%
	00098549	Install Back up Generator sta 7 Visalia	$ -	$ 238,901	$ 238,901	0%
	00099239	The 2016 main replacement program will replace 4,785 feet of pipelines in the Visalia district at an estimated cost of $160 per foot.	$ 597,337	$ 2,256,213	$ 1,658,876	26%
	00099253	Vehicle Replacements > 120,000 miles	$ -	$ 162,805	$ 162,805	0%
	00099369	Replace 34 SCADA radios	$ -	$ 75,178		0%
	VIS0900	Meter Replacement Program	$ 103,433	$ 313,975	$ 210,542	33%
Specifics Total			**$ 777,972**	**$ 3,592,048**	**$ 2,814,076**	**22%**
Non-Specifics Total			**$ -**	**$ 1,716,500**	**$ 1,716,500**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2016			**$ 777,972**	**$ 5,308,548**	**$ 4,530,576**	**15%**

2017	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00098051	Replacement of pump and motor due to low efficiency.	$ 63,485	$ 63,485	$ -	100%
	00098054	Replacement of pump and motor.	$ 63,485	$ 63,485	$ -	100%
	00098064	Replacement of pump and motor.	$ 86,188	$ 86,188	$ -	100%
	00098270	Install new Panelboard(MCC) and Emergency Generator	$ -	$ 417,084	$ 417,084	0%
	00098290	Install new Panelboard and retire existing at Stn13	$ -	$ 257,389	$ 257,389	0%
	00098340	Install new Panelboard and retire existing at Stn14	$ -	$ 236,809	$ 236,809	0%
	00098341	Install new Panelboard and retire existing at Stn32	$ -	$ 250,098	$ 250,098	0%
	00098997	Replace 7 flow meters and install vaults located at stations to be identfied. Add to SCADA	$ -	$ 279,712	$ 279,712	0%
	00098999	Replace flow meter Sta. 69	$ -	$ 32,175	$ 32,175	0%
	00099241	The 2017 main replacement program will replace 4,785 feet of pipelines in the Visalia district at an estimated cost of $160 per foot.	$ 611,435	$ 3,469,693	$ 2,858,258	18%
	00099256	Vehicle Replacements >	$ -	$ 175,835	$ 175,835	0%
	VIS0900	Meter Replacement Program	$ 105,874	$ 321,824	$ 215,950	33%
Specifics Total			**$ 930,466**	**$ 5,653,776**	**$ 4,723,310**	**16%**
Non-Specifics Total			**$ -**	**$ 1,756,700**	**$ 1,756,700**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2017			**$ 930,466**	**$ 7,410,476**	**$ 6,480,010**	**13%**

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2018	Project #	Project Description	ORA	CWS	CWS > ORA	ORA / CWS
	00098055	Replacement of pump and motor due to efficiency.	$ -	$ 65,072	$ 65,072	0%
	00098066	Replacement of pump and motor.	$ -	$ 88,342	$ 88,342	0%
	00098067	Replacement of pump and motor due to poor efficiency..	$ -	$ 127,438	$ 127,438	0%
	99179	Replace the SCADA system server and software. This is a the district portion of a combined project to replace all of the SCADA system software and hardware throughout Cal Water.	$ -	$ 879,698	$ 879,698	0%
	00099243	The 2018 main replacement program will replace 4,785 feet of pipelines in the Visalia district at an estimated cost of $160 per foot.	$ 625,375	$ 4,742,134	$ 4,116,759	13%
	00099257	Vehicle Replacements > 120,000 miles	$ 43,623	$ 43,623	$ -	100%
	VIS0900	Meter Replacement Program	$ 108,288	$ 329,869	$ 221,581	33%
Specifics Total			**$ 777,286**	**$ 6,276,175**	**$ 5,498,890**	**12%**
Non-Specifics Total			**$ -**	**$ 1,796,900**	**$ 1,796,900**	**0%**
Carry-Overs Total			**$ -**	**$ -**	**$ -**	**0%**
TOTAL 2018			**$ 777,286**	**$ 8,073,075**	**$ 7,295,790**	**10%**

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C. DISCUSSION

The Visalia District recorded $6,678,965 per year in average gross plant additions for the most recent six-year period 2009-2014.[342] Table 7-C compares CWS's and ORA's estimates against recorded annual average gross plant additions.

Table 7-C: Capital Budget Summary vs. Recorded Expenditures– Visalia District

Visalia ($000)	2015	2016	2017	2018	Annual Average	% of Recorded
2009-2014 Recorded	--	--	--	--	$ 6,679.0	100%
ORA	$ 1,870.5	$ 778.0	$ 930.5	$ 777.3	$ 1,089.1	16%
CWS	$ 9,657.8	$ 5,308.5	$ 7,410.5	$ 8,073.1	$ 7,612.5	114%

ORA presents a discussion on its analyses and recommended adjustments to CWS's requested capital budget for specific projects (Section 1), 2016 to 2018 Non-Specific Budget (Section 2), and 2015 Budget (Section 3) below.

1. Specific Projects

In this GRC, CWS proposes $15,522,000 for specific projects in 2016 to 2018. These projects include Pipeline Replacement Program, Small and Large Meter Replacement Program, SCADA software and hardware installation, flow meter replacements, pump replacements, generator installations, panelboard installations, vehicle replacement, hydrant meter reduced pressure assembly, and SCADA radio replacement. The following sections provide a discussion for each specific project that ORA adjusts or does not recommend.

[342] Gross plant additions include company funded plant additions as well as contributions and advance deposits for specific plant.

a. Pipeline Replacement Program

CWS requests approximately $10,468,040 to replace a total of 33,491 feet of pipeline between 2016 to 2018. ORA evaluated the leak rate, water loss, system age, results of AWWA's recommended pipeline replacement model, historical replacement rate, and replacement cost for each district and provided a detailed evaluation of CWS's pipeline replacement proposal in ORA's Common Plant Issues Testimony (see ORA's Report on Plant – Common Issues). **Table 7-D** below shows ORA's recommendations for pipeline replacement and the associated budgets in this district.

Table 7-D: Pipeline Replacement Program Budget –Visalia District

YEAR	PID	ORA's Recommendation		CWS's Proposal	
		Length (ft)	Budget	Length (ft)	Budget
2016	00099239	6,447	$ 597,337	7,545	$ 2,256,213
2017	00099241	6,447	$ 611,435	11,320	$ 3,469,693
2018	00099243	6,447	$ 625,375	14,626	$ 4,742,134
	Total	19,341	$ 1,834,147	33,491	$ 10,468,040

b. Small and Large Meter Replacement Program

Table 7-E below lists CWS's requests and ORA's recommendation on the replacement budget of small and large meters in the Visalia District. ORA's recommended budgets are based on detailed analysis and recommendation in its Report on Plant-Common Issues.

Table 7-E: Meter Replacement Program Budget – Visalia District

District:	Visalia		
YEAR	PID	ORA's Recommendation	CWS's Proposal
2016	0900	$ 103,433	$ 313,975
2017	0900	$ 105,874	$ 321,824
2018	0900	$ 108,288	$ 329,869

c. Replace SCADA Software and Hardware (PID 99179) for $879,698 in 2018

CWS proposes to replace SCADA software and hardware for $879,698 in 2018. For the reasons presented in ORA's Report on Plant - Common Issues, ORA recommends disallowing the project.

d. Replace Flow Meters at 8 Stations for $311,887 in 2017 (PIDs 98997 and 98999)

CWS proposes eight flow meter replacements and vault constructions under two project IDs 98997 and 98999 for a total of $311,877. **Table 7-F** shows ORA's recommendation and CWS's request.[343]

Table 7-F: Replace Flow Meters Budget – Visalia District[344]

Year	PID	Description	ORA's Recommendation	CWS's Proposal
2017	00098997	Replace 7 flow meters and install vaults located at stations 37, 45, 48, 49, 50 53 and TBD	$0	$279,712
2017	00098999	Replace flow meter and vault at Sta. 69	$0	$32,175
		Total Budget	$0	$311,887

CWS claims that the flow meters at the stations need to be replaced because they contain mechanical bearing that were designed and manufactured before current NSF testing and

[343] CWSs Project Justification Report, pages VIS PJ –8, VIS PJ-281 and CWS Response to ORA Data Request A1507015 - SN2-012, Q.2.d.iv, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xls.

certification standards.[345] ORA disagrees with these projects, because contrary to its claim, CWS provided no evidence that there are mechanical issues with the flow meters.

For reasons identified in ORA's Report on Plant-Common Issues and analysis below, ORA removes the budgets of the flow meters and the associated vault constructions at the eight stations from this GRC's capital budgets.

CWS did not identify any stations with a specific flow meter that needs to be replaced.[346] Without identifying the specific flow meter and the maintenance records, ORA could not to verify the needs for this project. Therefore, ORA recommends the Commission deny CWS's request for these projects.

CWS's maintenance and repair records for the stations showed that flow meters at Stations 37, 45, 58, 49, 50, 53 and 69 had no major issues.[347] For example, the records for Station 53 indicated that CWS repaired the flow meter 2 times and the last record in October 2015 showed the flow meter had no more issues. Similarly, at Station 69, CWS repaired the flow meter and the last record in September 2015 indicates it had no more issues. In summary, the last records for each flow meter showed that each meter had completed its routine maintenance of calibration, which indicated that any issues were

[345] CWS Project Justification Report, page VIS PJ-281, Lines 22-25.

[346] CWS Response to ORA Data Request A1507015 - SN2-012, Q.2.iiii, Excel spreadsheet attachment A1507015-SN2-012_q_2-e-4.xls.

[347] CWS Response to ORA Data Request A1507015 - SN2-012, Excel spreadsheet attachment A1507015-SN2-012_q_e_1.xls shows flowmeters maintenance records. For Visalia District: District ID no: 120 – Visalia district.

resolved and currently each flow meter is functioning properly.[348] Based on the above findings, ORA recommends the Commission deny these projects.

e. Pump Replacements (PIDs 98051, 98054, 98064, 98055, 98066, and 98067) for $494,009 in 2017 and 2018

CWS requests six pump and motor replacement projects for $494,009 in 2017 and 2018.[349] CWS performs efficiency testing of its pumps annually. **Table 7-G** shows CWS's request and ORA's recommendation based discussion in ORA's Report on Plant - Common Issues.

Table 7-G: Pump and Motor Replacements Budget – Visalia District[350]

Year	Project ID	Project Description	CWS Efficiency Rating*	ORA's Recommendation	CWS's Proposal
2017	00098051	Replacement of pump and motor sta. 68	VERY LOW	$ 63,485	$ 63,485
2017	00098054	Replacement of pump and motor sta. 89	VERY LOW	$ 63,485	$ 63,485
2017	00098064	Replacement of pump and motor sta. 18	LOW	$ 86,188	$ 86,188
2018	00098055	Replacement of pump and motor sta. 12	LOW	$ 65,072	$ 65,072
2018	00098066	Replacement of pump and motor sta. 23	GOOD	$ -	$ 88,342
2018	00098067	Replacement of pump and motor sta. 83	GOOD	$ -	$127,438
* Response to ORA Data Request DG-024, See Excel spreadsheet Attachment DG-024-2-a (MDR II F 8 Pump Efficiency).xlsx for Visalia Pumps			Total	$ 278,229	$494,009

[348] CWS Response to ORA Data Request A1507015 - SN2-012, Excel spreadsheet 1507015-SN2-012_q_e_1.xls shows flowmeters maintenance records. For Visalia District: District ID no: 120 – Visalia district.

[349] CWS Project Justification Report, page VIS PJ-212 and CWS's Response to ORA Data Request DG-024, CWS provides no justifications for projects under $100,000. In its response to this data request, CWS provided information of station number, pump id and the pump capacity. See Attachment DG-024-1-a (station-pump no –flowrate).pdf.

[350] CWS Response to ORA Data Request A1507015 - DG-024, CWS provides no justifications for projects under $100,000. In its response to this data request, CWS provided information of station number, pump id, and the pump capacity. See Attachment DG-024-1-a.

f. Generator Installations (PIDs 98017, 98545, 98549 and 98270) for $818,842 in 2016 and 2017

CWS proposes to install four generators at various locations[351] for a budget of $818,842 in 2016 and 2017.[352] Table 7-H shows the proposed generator projects and associated budget in the Visalia district.

Table 7-H: Generator Installations Budget – Visalia District

Visalia District			ORA's Recommendation	CWS's Proposal
Year	Project ID	Project Description		
2016	98017	Standby power system for scada to be installed Station 59 Scada	$0.00	$117,643
2016	98545	Install Back up Generator sta 37 Visalia	$0.00	$253,756
2016	98549	Install Back up Generator sta 7 Visalia	$0.00	$238,901
2017	98270	Install new Panelboard(MCC) and Emergency Generator (station 120)	$0.00	$208,542
		Total	$0.00	$818,842

In its Report on Plant-Common Issues, ORA provides a discussion of CWS's budgets and ORA's general approach for generator installations. ORA also reviewed each proposed generator individually.

The Visalia district consists of a single pressure zone, Zone 460 with more than 65[353]

[351] CWS Project Justifications Report also identifies generator as auxiliary engine. Example: CWS's PJ Report Page VIS PJ-247, see the project title and project description.

[352] PID 98270-Install New Panelboard and Emergency Generator at Station 12 total budget is $417,084. ORA estimated cost for the portion of generator is 50% of the budget, which is $208,542.

[353] CWS Report on the Result of Operation for the Visalia District (RO Report), pages 16 to 18, sites of wells and storage tanks are more than 65.

plant sites. In this district, there are 24 permanent generators in service[354] and there are no portable generator available.[355]

Upon ORA's data request, CWS provided engine logs of two generators that are located at the Stations 37 and 7, however, no engine log was provided for the generator at Station 59.[356] Currently Station 12 does not have any generators.[357] **Table 7-I** shows the number of existing permanent generators and no portable generators in zone 460.

Table 7-I: CWS's Generators and Utilization at 4 Stations

Visalia District				
Zone	Station	2010 to 2014 Utilization	Permanent Generators in the zone	Portable Generator in the zone
460	59	No data	24	0
	37	Not in service since 2009		
	7	5.2 hours in the last 5 years		
	12	No data		

According to the usage logs, the generator at Station 7 was used for 5.2 hours in the last five years (2010-2014). In addition to evaluating the utilization time, ORA considered other factors as discussed below in its recommendation of the need for the replacement of these generators.

[354] CWS Report on the Result of Operation for the Visalia District (RO Report), page 15, Well Production stated that the company's supply is obtained from over 90 wells, about a third of the wells are equipped with auxiliary engines for emergency operation. It is unclear why CWS only stated 24 upon its response to ORA's data request.

[355] CWS Response to ORA Data Request A1507015 - SN2-004, Q.1.e and Q.3.

[356] CWS Response to ORA Data Request A1507015 - SN2-004, Q.1.a. See Attachment SN2-004 Q1 (a) run logs for Visalia only 2010 to 2015 run logs for Station 7 are available.

[357] CWS Project Justification Report, page VIS PJ –218, Lines 63-64.

Station 59: According to CWS, Station 59 is servicing water to its customers throughout the year and it is a major SCADA repeater site.[358] Although the SCADA repeater has an existing Uninterruptable Power Supply ("UPS") as a secondary source of power in the event of emergencies, the existing UPS can only provide power supply for a few minutes.[359]

First, CWS did not provide an engine log for this station. Without this log ORA does not have any data to determine how often and how long the power outages are affecting this station. Therefore, ORA cannot verify if a generator is needed at this station.

Second, it appears that CWS is requesting the generator to replace the UPS unit, which has a limited amount of operating time. CWS failed to consider other potentially less costly alternatives such as evaluating mitigating measures for the limited operating time on the current UPS unit or replacing the current UPS unit with a higher quality one to allow a longer operating time. Currently CWS proposed to replace the UPS with a generator with a capacity of 35 kW,[360] while the power need for a SCADA repeater is up to 2kW. [361] The installation of a permanent generator is excessive to overcome the need for backup power for a SCADA repeater. CWS should at least evaluate these options prior to proposing a permanent generator at this site.

Station 37: CWS proposes a generator replacement for Station 37. According to CWS, the station serves its service area reliably and also provides water to a hospital. CWS

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[358] CWS Project Justification Report, page VIS PJ –248, Lines 12-13.

[359] Ibid, page VIS PJ –247, Lines 16-19.

[360] Ibid, page VIS PJ –251.

[361] http://www.synetcom.com/radio%20modem.htm. It explained a SCADA repeater consists of one or two radio modems. The SCADA Radio modem power consumption is 100 milliwatt (mW).

claims it is important to have backup electrical power available at all times.[362] The generator was damaged and was removed from service. Currently there is no backup generator at the site.[363] From the generator's run log, ORA found that Station 37 has been running without a backup generator since 2009.[364] Contrary to CWS's claim of "the importance to have backup electrical power available at all times," the absence of the generator for the last 6 years indicates otherwise. CWS also did not provide any complaints from the hospital for not receiving water during power outages. Since CWS has operated Station 37 without a permanent generator, CWS should consider the option of a portable generator that potentially more cost effective.

From the above analysis, ORA found that CWS provides no evidence that it is necessary to have a generator at Station 37 at this time. Therefore, ORA disagrees with the generator replacement at this station.

Station 7: CWS proposes a generator replacement for Station 7. According to CWS, the current generator was installed before 1975, since in the past decade the engine failed to start occasionally, replacement parts were difficult to obtain and maintenance cost have increased due to frequent repairs.[365] CWS failed to provide any documentation to substantiate its claim of an "increase" in maintenance cost. CWS also mentioned that there was a hospital near Station 7,[366] but similarly with Station 37, CWS did not provide any complaints or evidence from the hospital for not receiving water during power

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[362] CWS Project Justification Report, page VIS PJ –254, Lines 16-17.

[363] Ibid, page VIS PJ –254, Lines 19-20.

[364] CWS Response to ORA Data Request A1507015 - SN2-004, Q.1.a: See Attachment SN2-004 Q1 (a) run logs for Visalia Station 37: VIS-Sta #37.docx.

[365]CWS Project Justification Report, page VIS PJ –259, Lines 46-53.

[366]Ibid, page VIS PJ –260, Lines 70-71.

outages. In addition, the run log shows that in the last five years, the generator was only being used four times: 4 hours in 2010, 0.2 hours in 2011, 0.2 hours in 2012 and 0.8 hours in 2014. This generator was only used for a total of 5.2 hours in five years, which is equivalent to a utilization rate of 0.012% [367] per year.

As ORA mentioned earlier, there is no portable generator available in the district. The generators requested are only needed in the event of a power outage and those are limited in occurrence and duration as evidenced by the usage logs. The limited use of a generator should prompt CWS to evaluate the option of using portable generators in lieu of installing permanent ones. However, CWS failed to consider the option of using portable generators during a power outage. For these reasons, ORA disagrees with the replacement of the generator at this station.

Station 12: CWS claims that a new generator at Station 12 is needed due to power outages that are not uncommon in the Visalia district.[368] CWS explained that a recent power outage lasted for 5 hours. Contrary to CWS's claim that power outages "are not uncommon," the lack of usage logs for two generators and limited use of the generator at Station 7 indicate that power outages are few and limited in duration and location. Since CWS has operated Station 12 without the need of a permanent generator, CWS should evaluate the option of a portable generator.

For the reasons ORA discussed above. ORA recommends that the Commission deny the projects shown in **Table 7-H**.

[367] (100%* 5.2 hrs)/(5*365*24 hours) =0.012%

[368] CWSs Project Justification Report, page VIS PJ –218, Lines 54-56.

g. Panel Board Replacements (PIDs 98290, 98341, 98340 and 98270) for $952,838 in 2017

CWS proposes to install panel boards at Stations 12, 13, 14, and 32 for a budget of $952,838 in 2017.[369] **Table 7-J** shows the proposed projects and the associated budget.

Table 7-J: Panelboard Replacements [370]

Year	PID	Description	ORA's Recommendation	CWS's Proposal
2017	98290	Panelboard Replacement at Sta.13	$0	$257,389
2017	98341	Panelboard Replacement at Sta. 32	$0	$250,098
2017	98340	Panelboard Replacement atSta.14	$0	$236,809
2017	98270	Install new Panelboard(MCC) and Emergency Generator Sta. 12	$0	$208,542
		Total	$0	$952,838

In its Report on Plant-Common Issues, ORA provided a discussion on panel board replacement. ORA also evaluated the need of each panel board request individually based on CWS's inspection report and the maintenance/repairs costs in 2010 to 2014. Below is ORA's discussion:

Stations 13, 14 and 32: CWS claims that the panel boards are needed for a safer, code compliant and reliable operational system.[371] These existing panels were installed in

[369] CWS Project Justification Report, pages VIS PJ –217 to 241, PID 98270-Install New Panelboard and Emergency Generator at Station 12 total budget is $417,084. ORA estimated cost for the portion of panel board is 50% of the budget, which is $208,542.

[370] CWS Project Justification Report, page VIS PJ –217 to 241.

[371] CWS Project Justification Report, page VIS PJ –229, Lines 102-103, page VIS PJ –234, Lines 97-98, page VIS PJ –240, Lines 97-98.

1950[372] and have issues such as rust damage, panel being mounted directly on the floor, and wiring exposed to water plumbing in the midst of electrical wiring.[373] CWS also claims that the repairs and modification become more frequent and costly[374] but there were no supporting documents provided to substantiate its claim, and there are no records that shows replacing a generator is more cost effective than repairing.[375] ORA disagrees with these panelboard replacement projects because contrary to its claim, the inspection reports [376] do not indicate there are major issues of the panel boards. The reports showed that all listed items related to the panelboards were in good conditions, except for the item of "signs of water intrusion."[377] However, the reports did not require nor recommend that CWS take any corrective actions to replace any of the panel boards. For these reasons, ORA recommends the Commission deny the panel board replacement projects at Stations 13, 14, and 32.

Station 12: CWS claims that although the panelboard undergoes routine maintenance, repairs and modifications have become more frequent and costly.[378] CWS claims that replacing the existing panelboard will provide a safer, code compliant and reliable

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[372] Ibid, page VIS PJ –226, Line 53, page VIS PJ –237, Line 53, and page VIS PJ –232, Line 53

[373] CWS Response to ORA Data Request A1507015 - BYU-008, Q.1.b

[374] CWS Project Justification Report, page VIS PJ –225, Lines 27-29, page VIS PJ –231, Lines 27-29, and page VIS PJ –236, Lines 27-29

[375] CWS Response to ORA Data Request A1507015 - BYU-008, Q.1.a

[376] CWS Response to ORA Data Request A1507015 - SN2-016, Q.1.b. Attachments: SN2-016-1b-5 to 7 (PDF files)

[377] CWS Response to ORA Data Request A1507015 - SN2-016, Q.1.b. Attachments: SN2-016-1b-5 to 7 (PDF files)

[378] CWS Project Justification Report, page VIS PJ –217, Lines 31-33.

operational system.[379] The existing panel has issues such as rust damage, panel being mounted directly on the floor, and exposed wiring. While CWS claims increasing repairs and modification costs, there were no supporting documents provided to substantiate its claim. [380]Upon request, ORA found that the maintenance records showed that for the last 11 years (2005 to 2015), CWS completed four work orders, one electrical panel work, and three routine preventive maintenance works.[381] In addition, similar to the three stations above, in the inspection report for station 12,[382] there was no recommendation that CWS replace the panelboard.

For the reasons ORA discussed above, ORA recommends the Commission accept ORA's recommendation as shown in the **Table 7-J** above. CWS should also continue with the preventive maintenance work on the panels and reassess the condition in its next rate case.

h. Vehicle Replacements

CWS proposes several vehicle replacements in the Visalia district for a total budget of $382,262 in 2016, 2017, and 2018 as shown on **Table 7-K**.[383] CWS did not provide the revised information[384] for the 2016 and 2017 vehicle replacements. Based on the lack of

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[379] CWS Project Justification Report, page VIS PJ –233, Lines 141-144.

[380] CWS Response to ORA Data Request A1507015-BYU-008, Question 1.a.

[381] CWS Response to ORA Data Request A1507015 - SN2-016, Q.1.a: Attachment SN2-016-1-a-3 (VIS_panelboard_PM_WO).xlsx

[382] CWS Response to ORA Data Request A1507015 - SN2-016, Q.1.b. Attachments: SN2-016-1b-4_VISSt.120.pdf

[383] CWS's workpaper: Visalia Discovery 2015.xlsx for the Vehicle Replacements, Tab: (WP8B5a)

[384] CWS did not provide corrected supporting documentation after ORA made a phone call and sent emails to get the information of 2016 and 2017 vehicles: ORA called CWS (Teresita Cayas) on November 20,

information, ORA cannot verify the need of the vehicle replacements in 2016 and 2017. Therefore, ORA recommends that the Commission deny the projects in 2016 and 2017 and adopt the budget adjustment as shown in **Table 7-K** below.

Table 7-K: Vehicle Replacements - Visalia District

Project ID	CWS Proposed Year	ORA's Recommendation	CWS' Request (WP8B5)
99253	2016	$0	$162,805
99256	2017	$0	$175,834
99257	2018	$43,623	$43,623
	Total	$43,623	$382,262

i. Hydrant Meter Reduced Pressure Principal Assembly (PID 98200) for $96,374 in 2016

CWS proposes to install a Hydrant Meter Reduced Pressure Principal Assembly in Visalia district for $96,374 in 2016. Upon ORA's data request, CWS stated that currently the Visalia district already has 3 assemblies[385] and CWS did not provide any project justification or a detailed cost estimate.[386] Based on the lack of information, ORA cannot determine whether the cost is reasonable or how many and why CWS needs to have additional assemblies at this time. Therefore, ORA recommends the Commission deny this project.

2011 requested for a revised vehicle list and its costs, ORA followed up by email on the same day with subject Vehicle Workpaper Issue. ORA also followed up in December 8, 2015 with the same subject Vehicle Workpaper Issue.

[385] CWS Response to ORA Data Request A1507015 - SN2-015, Q.3.

[386] CWS Response to ORA Data Request A1507015 - SN2-015, Q.1, CWS failed to provide justification and the detailed cost estimated even after CWS was granted for 3 days extension. See CWS Partial Response #2 to SN2-015 (Visalia Plant).pdf

j. Replace 34 SCADA radio (PID 99369) for $75,178 in 2016

CWS proposes to Replace 34 SCADA radios for $75,178 in 2016. According to CWS, currently there are 67 SCADA radios[387] in the Visalia district. CWS claims that the existing SCADA radio communications is not functioning well because the radios[388] are old analog technology (Alligator radios).[389] Therefore, CWS proposes to replace the 34 Alligator radios with CWS's standard radios.[390] However, CWS's records showed that only 15 stations have Alligator radios.[391] The records indicated that most of Alligator radios experienced only one problem in the last 11 years, and all of those problems were fixed.[392] Note that upon ORA's request, CWS also failed to provide the project justification and the detailed cost estimate. Without the detailed cost estimate, ORA cannot verify whether the cost of the 34 radios is reasonable. In addition, based on the available data as ORA explained above, there is no evidence that the 34 Alligator radios

[387] CWS Response to ORA Data Request A1507015 - SN2-015, Q.2.a

[388] CWS Response to ORA Data Request A1507015 - SN2-015, Q.2.b: Upon ORA's request CWS identified the 34 locations of the radios, which are 7, 13, 14, 16, 25, 26, 30, 32, 37, 38, 41, 42, 45, 47, 48, 49, 50, 55, 56, 60, 63, 73,74, 77, 79, 80, 81, 82, 83, 92, 93, 95, 96, and 201. According to CWS, these stations have Alligator radios that are not functioning well. CWS claims that Cal Water's current standard is to use the MDS SD-9 digital radios, which have performed very well.

[389] CWS's Workpapers – Visalia Discovery 2015, see Tab: WP8B5a. Cell G51. CWS claims that Cal Water's current standard is to use the MDS SD-9 digital radios, which have performed very well.

[390] CWS's Workpapers – Visalia Discovery 2015, see Tab: WP8B5a. Cell G51. CWS claims that Cal Water's current standard is to use the MDS SD-9 digital radios, which have performed very well.

[391] CWS Response to ORA Data Request A1507015 - SN2-015, Q.2.d: Visalia Communication Work Orders.xlsx. The 2005 to 2015 records showed that most of communication failure problems were fixed. Including the 15 Alligator radios. See also **Appendix C**.

[392] CWS Response to ORA Data Request A1507015 - SN2-015, Q.2.d: Visalia Communication Work Orders.xlsx. The 2005 to 2015 records showed that most of communication failure problems were fixed. Including the 15 Alligator radios. See also **Appendix C**.

are not functioning; hence they are not warranted for replacements.[393] For these reasons, ORA recommends the Commission deny this project.

2. Non-Specific Budget for 2016 to 2018

CWS requests approximately $5,270,100 in the Non-specific Budget to address unforeseen, unplanned, and emergency projects and regulatory compliant projects. ORA's Report on Plant - Common Issues presents ORA's recommended total disallowance of budget.

3. 2015 Budget

CWS requests approximately $ $9,657,774 for plant additions in 2015 which consist of projects authorized for 2015 in the last GRC and projects authorized from previous GRCs. ORA's Report on Plant - Common Issues presents its analysis and basis for the adjusting the 2015 capital additions for Visalia District.

D. CONCLUSION

ORA's recommendations presented above have been incorporated in the calculations for ORA's recommended Plant in Service as shown in Table 7-1 in Company-wide Report, Appendix RO.

[393] CWS claims that the 34 Alligator radios are not functioning, but CWS provided no evidence that these 34 radios are warranted for replacements. The communication failure reports showed only 15 are the Alligator radios. See **Appendix C** excerpted from CWS Response to ORA Data Request A1507015 - SN2-015, Q.2.d Visalia Communication Work Orders.xlsx

Appendix A: ORA's Calculation for Galvanized Building Replacements - Bakersfield District

	Proposed Year	2017	2018
	Amount	3	1
2015 Building cost/unit	$ 8,000	$ 24,000	$ 8,000
Contingency @10%	10%	$ 2,400	$ 800
Subtotal		$ 26,400	$ 8,800
Overhead @25%	25%	$ 6,600	$ 2,200
Subtotal in 2015		$ 33,000	$ 11,000
Escalated to 2016	2.50%	$ 33,825	$ 11,275
Escalated to 2017	**2.50%**	**$ 34,671**	$ 11,557
Escalated to 2018	**2.50%**	$ 35,537	**$ 11,846**
ORA's Recommendation		$ 34,671	$ 11,846

Appendix B: ORA's Calculation for Tank Paintings - Bakersfield District

Tank painting projects (Interior Coating)								ORA's estimate		
Tank	D (ft)	H (ft)	π x[D] x [H]	80% of Shell Area (sqft)	20% of Shell Area (sqft)	Base Area (sqft)	Roof Area (sqft)	Immerse Zone (sqft)	Vapor Zone (sqft)	Interior Tank Size - Total (sqft)
				[a]	[b]	[c]	[d]	[e]=[a]+[c]	[f]=[b]+[d]	[e]+[f]
STA. 073-T5	40.5	27.0	3,434	2,416	1,017	1,288	1,288	3,704	2,305	6,009
STA. 188-T1	44.0	30.0	4,145	3,040	1,105	1,520	1,520	4,559	2,625	7,184
Notes:										
In Sta. 073-T5's tank inspection report (2/2014), it recommended to complete interior coating. Also it indicated that the overflow, rafters, earquake rods, ladder, safety climbing and inlet piping were ok.										
In Sta. 188-T1's tank inspection report (12/2013), it recommended to complete interior coating. Also it indicated that the overflow was ok, rafters was rusted and earthquake rods, ladder, safety climbing were not available.										

Diameter =	[D]
Height =	[H]
Shell Area=	π x[D] x [H]
Roof Area=	π x[D/2] x [D/2]
Base Area=	π x[D/2] x [D/2]
Immerse Zone =	80% of Shell Area + Base Area
Vapor Zone=	20% of Shell Area + Roof Area

Appendix C: CWS's communication failure reports from 2005 to 2015 - Visalia District

No	Work Order	Location	Description	Status	Target Start	Actual Finish	ORA' Comments
1	157557	120_007_SC1*	Check Scada signal	CLOSE		4/8/10	SCADA radio problem was fixed
2	262371	120_009_SC1	SCADA DATA FAIL	CLOSE		6/15/15	SCADA radio problem was fixed
3	250256	120_024_SC1	CHECK SCADA REMOTE	CLOSE		5/1/15	SCADA radio problem was fixed
4	245398	120_024_SC1_MOD	sta 24-01 scada panel	CLOSE		11/18/14	SCADA radio problem was fixed
5	246831	120_026_SC1*	scada ot working	CLOSE		10/29/14	SCADA radio problem was fixed
6	263897	120_026_SC1	scada not working "suspect"	CLOSE		6/29/15	SCADA radio problem was fixed
7	155278	120_030_SC1*	check scada radio	CLOSE		3/9/10	SCADA radio problem was fixed
8	156035	120_047_SC1*	Scada not working.	CLOSE		1/20/10	SCADA radio problem was fixed
9	119522	120_048_PB01*	Scada is not communicating.	CLOSE		6/21/06	SCADA radio problem was fixed
10	153756	120_051_SC1	Check SCADA RTU	CLOSE		10/13/09	SCADA radio problem was fixed
11	246832	120_051_SC1	scada not working	CLOSE		10/29/14	SCADA radio problem was fixed
12	272491	120_052_SC1	St.120_50 scada issue communication.	CLOSE		8/11/15	SCADA radio problem was fixed
13	121832	120_060 *	Scada communications failure	CLOSE		5/4/07	SCADA radio problem was fixed
14	169944	120_063_SC1_RAD *	Scada will not comm.	CLOSE		5/3/11	SCADA radio problem was fixed
15	144081	120_074_PB01*	Scada communications failure.	CLOSE	5/12/08	5/12/08	SCADA radio problem was fixed
16	157796	120_077_SC1 *	Scada communication no good	CLOSE		5/28/10	SCADA radio problem was fixed
17	155366	120_082_PB01 *	Check Scada status	CLOSE		12/7/09	SCADA radio problem was fixed
18	191189	120_083_SC1_RAD *	scada com issues at 83 vis	CLOSE		4/11/12	SCADA radio problem was fixed
19	142216	120_092*	Scada on communication failure	CLOSE		2/6/08	SCADA radio problem was fixed
20	238298	120_093_SC1_RTU *	CHECK SCADA AT STATION 93-01	CLOSE		6/27/14	SCADA radio problem was fixed
21	252816	120_096_SC1_RAD *	check scada remote data fail	CLOSE		5/1/15	SCADA radio problem was fixed
22	273160	120_DISTRICT	Scada faults 42*,34,2,11,19	CLOSE		10/9/15	SCADA radio problems were fixed
23	287644	120_019_PB01	Failed to start fault scada	APPR			Open SCADA radio problem
24	116061	120_DISTRICT	Miscellaneous Scada.	CLOSE		12/6/05	Cannot verify the station(s) of the radio problem(s)
25	119751	120_DISTRICT	Scada communications failures.	CLOSE		8/29/06	Cannot verify the station(s) of the radio problem(s)
26	148711	120_DISTRICT	Scada radio repeater is not working.	CLOSE		11/10/08	Cannot verify the station(s) of the radio problem(s)
27	149290	120_DISTRICT	numerous scada sites on data fail	CLOSE		12/29/08	Cannot verify the station(s) of the radio problem(s)
28	190426	120_DISTRICT	Scada issue's in Visalia	CLOSE		1/21/15	Cannot verify the station(s) of the radio problem(s)
29	230847	120_DISTRICT	twenty scad remotes data fail	CLOSE		4/16/14	Cannot verify the station(s) of the radio problem(s)
30	274165	120_DISTRICT	Loss of communications on all scada	CLOSE		8/11/15	Cannot verify the station(s) of the radio problem(s)
		* Alligator Radios (only 15 Alligator Radios are identified)					